Grade: 7 Mathematics Holiday Home work 30 days March 2020

DAY 1

A. Number System:

1. What are natural numbers?

- What is the smallest natural number?
- Are all the numbers positive?
- Is 0 a natural number?

2. What are whole numbers?

- Is the set of whole numbers bigger than the set of natural numbers?
- What is the difference between set of natural numbers and whole numbers?
- What is the least/smallest number in the set of whole numbers?
- Do we have negative numbers in the set of whole numbers?

Properties of whole numbers:

3. What is commutative property of whole numbers under addition? Give an example.

- What is asosciative property of whole numbers under addition? Give an example.
- What is additive identity? Give two examples.
- What is commutative property, associative property of whole numbers under multipliaiton? Give two examples.
- What is distributive property? Give two examples.

4 (a). Which number precedes 78,000? .

(b) Find the predecessor of 83,20,000.

(c). Which number succeeds 57,899?

(d). Find the successor of 5,21,199.

5. Write four whole numbers before 28201.

6. Identify the property of addition for whole numbers used in the following equality:

48 + 79 = 79 + 48.

Identify the properties used in the following questions:

7. Evaluate using properties of whole numbers: (95 x 7) + (95 x 3).

8. Fill in the blank so that the equality holds: 12 + (4 + 6)= (____+6)+12.

9. Hiyang bought a shirt for Rs.475 and a trouser for Rs.1025. How much amount will he pay if he bought 2 shirts and 2 trousers?

Grade: 7 Mathematics Holiday Home work 30 days March 2020

10. Write two examples to show that whole numbers are not closed under subtraction.

11. Write two examples to show that whole numbers are not closed under division.

12. Identify the property of whole numbers used in the following equality:

32 + (93+15)=(32+93)+15

13. Identify property of multiplication used in the following equality:

47 x 3 +47 x 7 = 47(3+7)

14. Find the sum of the following expression by rearrangement: 463 + 155 + 637 + 845.

15. Use suitable property to solve the following:

(i) 236 x 999 (ii) 478 x 102 (iii) 182 x 5 (iv) 64 x 25
(v) 43 x 125 (vi) 56 x 15 (vii) 12 x 35.

16. Which of the following gives 1 as answer?

(i) 4231 +1 (ii) 4325-4325 (iii) $1 \div 2463$ (iv) $6343 \div 6343$

17. Give one example to show that the Associative property of division of whole numbers does not hold.

18. Evaluate the following expression by suitable rearrangement: 625 x 30 x 8 x 20

19. (a) Convert 2 kilograms into grams

(b). How many kilometres equals 1000 meters?

(c). How many meters equal 1000 cm?

20. A new music video on the web received 2,78,946 hits the first day and 3,17,823 hits the second day. How many hits did the video receive in all during the two days?
(Ans.: 5,96,769)

21. What is the difference between the face values and the place values of the two nines in 8936954? (Ans. : 8,99,991 and 891)

22. State distributive property and solve.:

(i) 101 x 497 (ii) 77 x 23 (iii) 203 x 42 (iv) 497 x 98

23. A machine produces 3,575 erasers in a day. How many erasers were produced in February 2016? (Ans.: 1,03,675)

24. For the school fete, a ticket costs Rs.8. There are 25 students in each class and each student bought a ticket. If there are 78 classes in the school, then how much money was collected by the sale of tickets?

Grade: 7 Mathematics Holiday Home work 30 days March 2020

25. There are 15 classes in a school. In each class, there are 22 boys and 28 girls. Find the total number of students in the school? Which property of whole numbers would you use to quickly find the answer?

26 A large housing complex has 30 towers. Among these, six towers have 14 floors and 6 flats on each floor. Twelve towers have 22 floors with 4 flats on each floor and 12 towers have 26 floors with 3 flats on each floor. Find the total number of flats in the housing complex. (Hint: Remember that multiplication is distributive over addition).

DAY 2: Even Numbers:

1. What are even numbers? Give 3 examples.

2. What are odd numbers? Give 3 examples.

3. What are prime numbers? Give 3 examples.

4. What are composite numbers? Give 3 examples.

5. What are co-prime numbers? Give 3 examples.

6. What are twin primes? Give 3 examples.

Factors, H.C.F, L.C.M, Multiples.

7. What are called as factors? List the factors of 12.

- If there are 12 chacolates, in how many ways can you group them into equal numbers?
- What are the factos of prime numbers?
- How many factors can you ahve for any given number? Find out by taking two examples. Are the factors finite/infinite?

8. What are multiples? List the multiples of 12.

- Find the 10 multiples of 2.
- Find the 10 multiples of 3.
- Find the 6 multiples of 12.
- Are the multiples of any number finite/infinite?

9. What is H.C.F? If H.C.F of two numbers is 1, what are those numbers called?

10. What is L.C.M? Can L.C.M of any two numbers be equal to 1?

11. What are consecutive numbers?

- Write 5 consecutive natural numbers.
- Write 5 consecutive whole number.
- Write 5 consecutive integers.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

- Write 5 consecutive prime numbers.
- Write 5 consecutive even numbers.
- Write 5 consecutive odd numbers.
- Write 5 consecutive composite numbers.

12. What is the relation between H.C.F and L.C.M of two given numbers.

13. a. Write all the factors of 15. b. Write the first four multiples of 7.

14. Write all the prime numbers between 1 and 15.

15. Write two pairs of twin-prime numbers.

16. Using the tests of divisibility find which of the following numbers is divisible by both 2 and 5?

(i) 23785 (ii) 93234 (iii) 70890 (iv) 48308

17. Using the tests of divisibility find which of the following numbers is divisible by both 4 and 6.

(i) 23780 (ii) 93220 (iii) 894532 (iv) 60828

18. Using tests of divisibility, find if 55530 is divisible by 45.

19. Find the number closest to and bigger than 1000 that is divisible by both 5 and 6.

20. Find the prime factorisation of 135 using factor tree.

21. Find the prime factorisation of 390.

22. Write the prime factorisation of the smallest 4 digit number.

23. Find the LCM of 45, 78 and 15 by prime factorisation method.

24. Find the LCM of 12, 24 and 36.

25. What is the HCF of 1632, 2976 and 3552?

26. Find the greatest number that divides 79, 115 and 163 leaving remainder 7 in each case.

27. Replace * by the smallest digit so that: (i) 784*679 is divisible by 3

(ii) 25*470 is divisible by 9.

28. Replace * by the smallest digit so that:
(i) 963*48 is divisible by 8 (ii) 1567*78 is divisible by 6.

29. Using tests of divisibility, find if 55530 is divisible by 45.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

30. The HCF of two numbers is 15. The product of the two numbers is 345. What is their LCM?

31. Given two numbers 48 and 80, find their HCF and LCM and verify that HCF x LCM = 48 x 80.

32. Megha has two pieces of cloth. One cloth is 270cm long and the other one is 350cm long. She wants to cut them into strips of equal length that are as long as possible. What is the length of each strip?

33. Two water tanks have capacities 30 litres and 18 litres, respectively. What is the highest measure of a measuring cylinder which can exactly measure the water of both the tanks when the tanks are full?

34. There are two bells in a school. The bell for the middle school rings every 60 minutes, whereas the bell for the junior school rings every 30 minutes. If the school starts at 10:00 AM, when will the bells ring together?

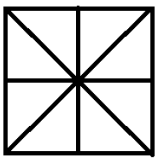
35. Four bells ring at intervals of 4, 7, 12 and 84 seconds, respectively. If they start ringing together at 7O'clock, when will they ring together again?

Day 3 Fractions.

1. What is a fraction? Give two examples.

- What are proper fractions? Give two examples.
- What are improper fractions? Give two examples.
- What are like fractions? Give two examples.
- What are unlike fractions? Give two examples.
- What are equivalent fractions?
- How do you find if two fractions are equivalent?

2. Shade each figure to represent the given fractions.

(i)  $\frac{5}{8}$ (ii)  $\frac{8}{12}$

3. What fraction is 375g of 1 Kg.?

4. Into how many parts would you divide the length between 0 and 1 to represent the fraction $\frac{1}{11}$.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

5. Which of the following are proper fractions?

(i) $\frac{7}{6}$ (ii) $\frac{78}{89}$ (iii) $\frac{80}{79}$ (iv) $\frac{1}{8}$

6. Write a proper fraction whose denominator is 6.

7. Write the following improper fractions as mixed fractions: (i) $\frac{38}{7}$ (ii) $\frac{123}{11}$

8. Write the following mixed fractions as improper fractions :(i) $3\frac{4}{7}$ (ii) $5\frac{7}{12}$

9. Write three equivalent fractions of $\frac{12}{13}$.

10. Write the following fractions in their simplest form.(i) $\frac{40}{48}$ (ii) $\frac{78}{130}$

11. Which of them are like fractions? $\frac{1}{2}, \frac{2}{5}, \frac{1}{3}, \frac{3}{5}, \frac{1}{5}$

12. Compare the pair of fractions and fill in the blanks appropriately with <, > or =.

(*i*) $\frac{4}{6} \square \frac{5}{6}$ (*ii*) $\frac{1}{2} \quad \frac{2}{4} \square$ (*iii*) $\frac{4}{9} \quad \frac{4}{10} \square$

13. Find the sum: $\frac{1}{9} + \frac{4}{9}$ 14. Find the difference: $\frac{7}{13} - \frac{3}{13}$

15. Gopichand spends $\frac{8}{12}$ of his income and saves the rest. Bimal spends $\frac{9}{12}$ of his income and saves the rest. Who spends the greater share of his income?

16. A fruit basket has 5 oranges, 4 apples and 7 pears. What fraction of all the fruits are oranges?

17. What fraction of numbers between 20 and 31 are:(i) Multiples of 3? (ii) Multiples of 5?

18. Write all the proper fractions whose denominator is 2 more than the numerator but less than 8.

19. Find an equivalent fraction of $\frac{6}{8}$ with denominator 56.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

20. Replace @ in the given equality with an appropriate number using cross-product method: $\frac{5}{7}=\frac{35}{@}$

21. Which of the given pair of fractions are equivalent?

(i) $\frac{3}{9}$ *and* $\frac{12}{36}$ (ii) $\frac{48}{72}$ *and* $\frac{6}{9}$ (iii) $\frac{9}{13}$ *and* $\frac{72}{91}$

22. Arrange the given fractions in ascending order: $\frac{3}{9},\frac{8}{18},\frac{6}{9},\frac{9}{9},\frac{16}{18},\frac{1}{9}$

23. Arrange the given fractions in descending order: $\frac{3}{9},\frac{3}{8},\frac{3}{10},\frac{9}{33},\frac{3}{5},\frac{3}{4}$

24. Harmeet jogged $\frac{5}{7}$ of an hour and Hitesh jogged $\frac{7}{9}$ of an hour. Who jogged for a longer duration?

25. Lathika painted $\frac{6}{8}$ and Harvinder $\frac{7}{10}$ of the fence around the school garden. Who painted more?

26. Find the sum: $\frac{12}{28}+\frac{2}{8}$ 29. Find the difference: $\frac{9}{12}-\frac{5}{16}$

27. In an exam, Manoj answered 25 questions correctly. If the total number of questions asked in the exam were 40 and he didn't attempt 7 questions find:

(i) The fraction of answers he got right.(ii) The fraction of answers he got wrong.
(iii) The fraction of questions he did not answer.

28. Write all the proper fractions whose numerator and denominator are prime numbers between 65 and 80.

29. In Section A of 40 students, 36 students got more than 80% marks. In section B of 36 students, 30 students got more than 80% marks. In which section did a greater fraction of students score more than 80%?

30. Find the sum: $2+\frac{3}{4}+1\frac{5}{8}$

31. Find the difference: $5\frac{10}{15}-3\frac{2}{16}$

Grade: 7 Mathematics Holiday Home work 30 days March 2020

32. On my birthday party, my friends ate $5\frac{1}{4}$ pizzas. There were $2\frac{3}{4}$ pizzas left over. How many pizzas were bought for the party?

33. Ashu had $3\frac{1}{2}$ bars of chocolate. He gave $1\frac{1}{4}$ to his sister. How much chocolate is left with him?

34. Sam read $1\frac{5}{13}$ pages of a novel on Saturday and $17\frac{7}{12}$ pages on Sunday. Find:

(i) How many more pages did he read on Sunday than on Saturday?

(ii) The total number of pages read on Saturday and Sunday.

35. Can you represent decimals as fractions?

36. What are like decimals? Give 2 examples.

37. What are unlike decimals? Give 2 examples.

38. Write the following fractions as decimals: (i) $\frac{5}{2}$ (ii) $\frac{2}{5}$ (iii) $\frac{7}{10}$

39. Change the unit of each of the following measures to cm.
(i) 6cm (ii) 3cm 9cm (iii) 540 cm

40. The length of an eraser is 13mm. What would be its length in cm?

41. Write the following as decimals:

(i) $4\frac{2}{5}$ (ii) $600 + 70+8+\frac{9}{10}$ (iii) $\frac{6}{8}$ (iv) $\frac{8}{1000}$ (v) $200+40+5+\frac{7}{10}+\frac{8}{100}+\frac{9}{1000}$

42. Find the sum in each case.

(i) 40.67 + 53.19 (ii) 251.34+234.24+89.34 (iii) 256.009+34.27+8.8

43. Find the difference in each case.

(i) 97.67-45.78 (ii) 514.78-34.09 (iii) 24.07-4.678

44. Fareeda wants to purchase a dress for Rs.245.70. She has Rs.195.50 with her. How much more money does she need?

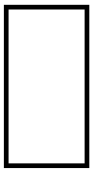
45. The temperature in a city at noon was $30.8°C$. It rained a little and the temperature cam down by $9.6°C$. What was the temperature of the city after the rains?

Grade: 7 Mathematics Holiday Home work 30 days March 2020

DAY 4 Mensuration

1. Draw a square of side 4 cm.

2. Measure and find if the following are squares or rectangles.

a)  b)  c)  d) 

3. a) What do you mean by perimeter of any closed figure.

b) What do you mean by area of any closed figure?

4. Why do we use units to measure area and perimeter?

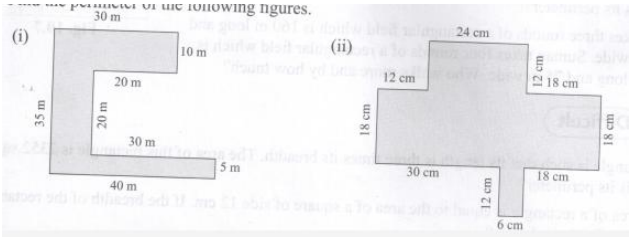
5. Write the formulas for a) Perimeter of the rectangle. b) Perimeter of a square.
c) Area of a square d) Area of a rectangle.

6. What do you mean by regular figures? Give two examples.

7. Given a side of length ℓ. Find

a) Perimeter of equilateral triangle b) Perimeter of a square c) Perimeter of a regular pentagon. d) Perimeter of a regular hexagon.

8. Find the perimeter of the following figures.



9. Find the perimeter of a square of side 12 cm.

10. What is the perimeter of a rectangle whose length is 20cm and breadth is 10cms?

11. a) What is the perimeter of an equilateral triangle of side 42cm?

b) What is the perimeter of a regular pentagon with each side measuring 24cm?

12. a) What is the area of a square of side 6m?

b) What is the area of a rectangle with sides 35mm and 15mm?

13. Ashu wants to buy a table cloth that exactly covers a rectangular table which is 27 inches long and 18 inches broad. What should be the area of the table cloth? Give your answer in sq. inches.

14. Rohan takes 5 laps around a rectangular field which is 60m long and 35m wide. How much distance he cover.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

15. Geeta walks around a square park four times. If the side of the park measures 150m, how much distance does she cover?

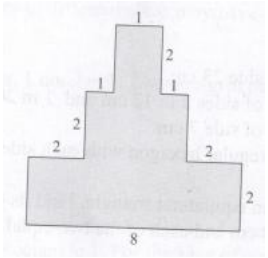
16. The length of a rectangle is 52.87 m and the breadth is 17.43m.
what is its perimeter?

17. Rita takes three rounds of a rectangular field which is 160m long and 150m wide, Suman takes four rounds of a rectangular field which is 120m long and 75m wide. Who walks more and by how much?

18. The dimensions of the floor of a room are 10m x 8m. It has to be covered with tiles measuring 0.8m x 0.5m. How many such tiles are required?

19. A room has length 15m and breadth 12m. The floor of the room has to be tiled with square tiles of side 0.6m. How many tiles are required?

20. Given that the area of each small square is 1 square unit, what is the area of the shaded portion in Figure 10.7?



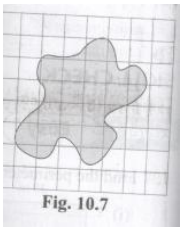


Fig. 10.7

21. Find the area of the given figure by splitting it into rectangles.

22. A craftsman wants to make a huge rectangular carpet measuring 12.8m x 5.5m by joining together small carpet patches measuring 0.5m x 0.8m. How many such patches are required?

23. The dimensions of a room are 4.25m x 3.25m. A square carpet of side 0.8m is laid on the floor. What is the area of the uncovered floor?

24. A piece of cardboard is 3.25 m long and 2.75 m wide. Four square pieces of sides 0.75m are cut out of it. What is the area of the cardboard left?

Chapter: Basic Geometrical Ideas.

1. Draw a) Ray b) Line c) Line segment

2. Choose the correct option:
(i) A_____ marks the exact location of an object. a) Plane b) point c) lined) ray

(ii). A collection of points along a straight path going endlessly in both directions is called a _____. a) ray b) line c) line segment d) plane

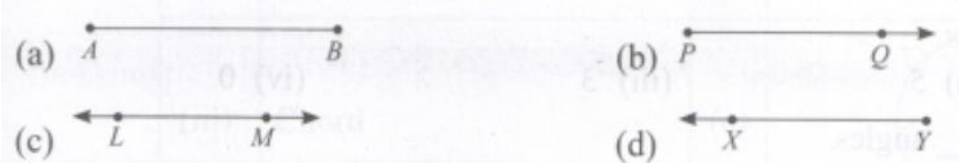
(iii) A _____ as no length, breadth or height.

a) Point b) line c) plane d) ray

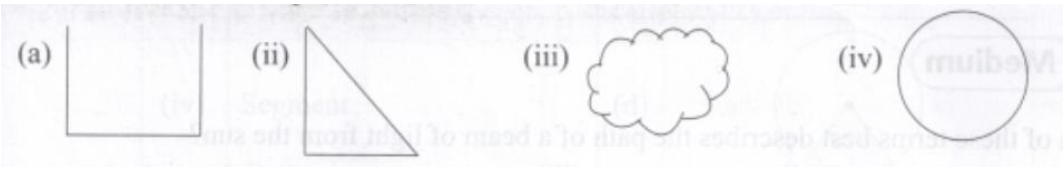
(iv) A _____ has only length and no width.

a) Point b) line c) plane d) ray.

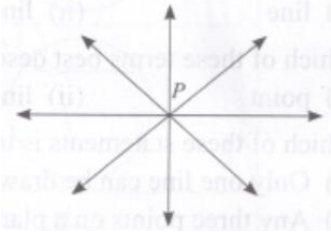
(v) Which of these is a line?



(vi) Which of these is an open curve?

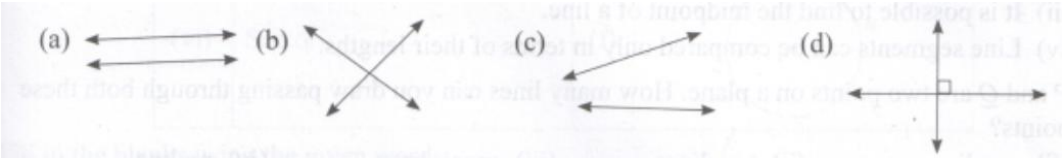


(vii) In the given figure, point P is _____.

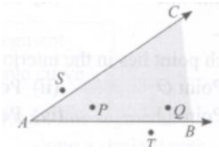


(a) Vertical point
(b) point of concurrence
(c) point of intersection
(d) both point of intersection and point of concurrence.

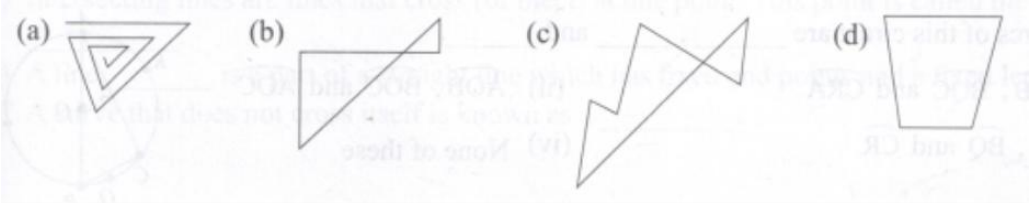
(viii) Which of these pairs of lines are parallel?



(ix) Which of these points lie in the interior of the angle CAB?



(x) Which of these is an open curve?



Grade: 7 Mathematics Holiday Home work 30 days March 2020

3. Match the geometric entities in column A with the way they are denoted in column B.

Column A	Column B
(i) Line	(a) $\angle ABC$
(ii) Ray	(b) $\overline{AB}$
Column I	Column II
(iii) Line segment	(c) $\vec{AB}$
(iv) Angle	(d) $\triangle ABC$
(v) triangle	(e) $\overleftrightarrow{AB}$

4. A quadrilateral has _____angles. (i) 4 (ii) 5 (iii) 3 (iv) 2

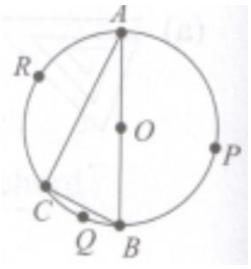
5. Which of these terms best describes the path of a beam of light from the sun?

(i) line (ii) line segment (iii) ray (iv) point

6. Which of these terms best describes the path of an arrow fired from its bow to hit a target?

(i) point (ii) line (iii) line segment (iv) ray

7. Consider the given figure.
Three arcs of this circle are _____ , _____ and _____.



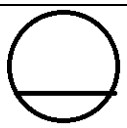
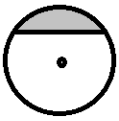
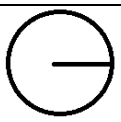
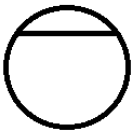
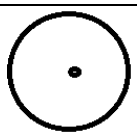
(i) ABC, BQC and CRA (ii) AOB, BOC and AOC

(iii) AP, BQ and CR (iv) None of these.

8. A circle has radius 12cm. What is the length of the longest stick that can be placed inside this circle such that the two ends of the stick lie on the circle? (i) 12cm (ii) 24cm (iii) 18cm (iv) 36cm.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

9. Match the parts of a circle given in Column A with their figures given in column B.

	Column A		Column B
(i)	Radius	(a)	
(ii)	Diameter	(b)	
(iii)	Chord	(c)	
(iv)	Segment	(d)	
	Column I		Column II
(v)	Arc	(e)	
(vi)	Sector	(f)	

10. Fill in the blanks using the given words:

Directions	Polygons	Segment
Diagonal	Intersection	Simple curve

(i) _____ are simple closed curves that are made of only straight line segments.

(ii) A line is a collection of points going endlessly in both_____ along a straight path.

(iii) Intersecting lines are lines that cross (or meet) at one point. This point is called the point of _____.

(iv) A line _____ is a part of a straight line which has fixed end points and a fixed length.

(v) A curve that does not cross itself is known as a _____.

11. Consider the figure 4.2.
Which of these is a pair of parallel lines?

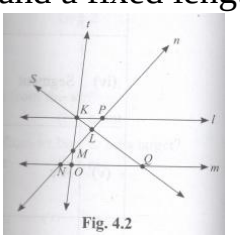


Fig. 4.2

(i) *l* and *n* (ii) *t* and *m* (iii) *s* and *m* (iv) *l* and *m*

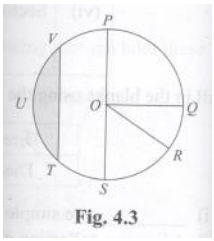


Fig. 4.3

12. How many radii does a circle have?

(i) 1 (ii) 10 (iii) infinite (iv) 2

13. Answer the following from figure 4.3

(i) Name the centre of the circle.
(ii) Name two radii of the circle.
(iii) Name a diameter of the circle
(iv) Name an arc of the circle.
(v) Name a segment of the circle.
(vi) Name a sector of the circle
(vii) Name a chord of the circle.

DAY – 5 Algebra

1. Write the statements for the following algebraic expressions.

(i) x + 6 (ii) 20 + y (iii) 4 + 9r (iv) $\frac{2q}{5}$

2. Generalize the commutative property of addition of whole numbers using the variables m and n.

3. Which of the following are algebraic expressions?

$(i) 12 \div (-8)$ $(ii) 45 + (23 - 3)x2$ $(iii) 44 - \frac{1}{2}$

$(iv) 13 - \frac{1}{2}(4 - 7z)$ $(v) 22x(39 \div 13) + 6$

4. Following are some algebraic statements. Change them into ordinary language.

(i) Shyam has Rs.x. Ritu has Rs.(x-8).

(ii) The length of a playground is *l*m. Its breadth is $\left(\frac{1}{3} - 4\right)m$

(iii) Ramesh has x marbles. Karn has $\frac{5}{4}x$ marbles.

4. Write algebraic expressions for each of the following algebraic statements.

(i) n multiplied by 8 and then 15 subtracted from the product.

(ii) q multiplied by -4 and then 7 subtracted from the product.

5. Write the statements for the following algebraic expressions.

(i) 5a-1 (II) -20+y (iii) -8 (2 –m) (iv) $\frac{25}{s} - 2$

6. List all the expressions that can be formed using b and 4 such that:

- There is at the most one number operation in each expression.
- Each expression has b in it.

7. Formulate a rule to find the perimeter of a regular octagon if the length of its side is denoted by *l*. [Hint: A regular octagon has eight equal sides.]

8. Generalize the associative property of addition of whole numbers using the variables p, q and r.

9. Raveena has 3 dolls more than Naina. Find the number of dolls that Raveena has if Naina has n dolls.

10. A man is 3 years younger than Sudha. If Aman is x years old, what will be Sudha's age after 10 years.

11. Kaajal is 4 years younger than Reems. If Reema's age is y years, what is Kaajal's age?

12. The length of a rectangle is 2 times its breadth. Find the length if the breadth is b meters.

13. Choose the option that is the solution of the equation 32x = 352.

(i) x = 13 (ii) x = 12 (iii) x = 11 (iv) x = 14.

14. Choose the option that is the solution of the equation $\frac{4y}{10} = 6$

(i) y = 12 (ii) y = 15 (iii) y = 18 (iv) y = 30.

Ratio and Proportion.

15. Sam covers 1 km in 8 minutes. If he continues to walk at the same speed, how much distance will he cover in 24 minutes?

16. A box containing 10 pencils costs Rs.12. How much would 7 such boxes cost?

17. A room is 10 feet wide and 12 feet long. What is the ratio of its length to its breadth?

18. Divide Rs.520 between two friends in the ratio 5 : 8.

19. Which of these ratios is/are equivalent to 4 : 9?

(i) 28 : 63 (ii) 44 : 99 (iii) 64 : 144 (iv) All of these.

20. Fill in the missing numbers: $\frac{4}{9} = \frac{\quad}{18} = \frac{24}{\quad} = \frac{\quad}{27}$

21. A bike covers 15m in one second. If the bike runs at the same speed, how much distance will it cover in 3 minutes?

22. A box containing 8 pairs of socks costs Rs.240. What will be the cost of 2 boxes containing 10 pairs of socks each?

23. The length of a hall in 45m and its breadth is 30m. What is the ratio of its length to its perimeter?

24. An amount of Rs.150 is divided between two boys in such a way that the first boy gets twice the amount that the second boy gets. How much money does each boy get?

25. What is the ratio of:

(i) 220mL to 3.5L? (ii) 60 paise to Rs.2?

26. Grandfather divided toys between Ganesh and Prerna in the ratio 7 : 9. Fill up the table that shows some possible number of chocolates shared between them.

Ganesh	14	63	_____	42
Prerna	18	_____	162	_____

27. A car covers 6Km in 4 minutes. If it travels at the same speed, how much distance will it cover in 2 hours.

28. A class room is 20 feet wide. Its length is twice as long as its breadth. What is the ratio of the length of the room to its perimeter?

29. The statue of Liberty is 93 m high. Its souvenir of height 12.4cm is to be made. What is the ratio of the height of the statue to that of the souvenir?

30. Samira sells newspapers at Janpath crossing daily. On a particular day, she had 312 newspapers out of which 216 are in English and remaining in Hindi. Find the ratio of

a) the number of English newspapers to the number of Hindi newspapers.

b) the number of Hindi newspapers to the total number of newspapers.

Day 6 - Integers

1. Define the set of integers? Draw the number line to represent the set of integers.

2. Do we have negative numbers in the set of integers?

3. What is the greatest negative integer?

4. What is the least positive integer?

5. Is zero a positive integer or a negative integer?

6. Is the set of integers finite or infinite?

7. Where do we use negative integers in real life? Give three examples.

8.. Write the following as integers with appropriate signs.

(i) A gain of 20% (ii) 25°C above freezing point (iii) 10 Km below sea level
(iv) 15 Km above sea level (v) A fall of Rs.2 in price (vi) Deposit of Rs.2000.

9. Write the opposite statement of each of the following:

(i) Deposit of Rs.500 (ii) Going 20 Km north (iii) Withdrawal of Rs.350

(iv) Gaining 10 Kg. (v) Loss of Rs.200 (vi) 30 Km above sea level.

10. Compare the following pairs of numbers using the symbols < and >

(i) -2 _____ 0 (ii) -3 _____ -6 (iii) -3 _____ -1
(iv) 10 _____ 12 (v) -9 _____ - 22 (vi) -5 _____ 3
(vii) 8 _____ - 10

11. State whether the following are True or False. Correct the statement if incorrect.

(i) Negative numbers and positive numbers together form the system of integers.

(ii) The negative integers are smaller than the positive integers and zero.

(iii) Zero is neither a positive nor a negative integer.

(iv) -86 is greater than – 75. (v) -9 is to the left of -10 on a number line.

(vi) The smallest integer is 0

(vii) On a number line, if you move 2 steps to the left from 0, you will reach 2.

(vii) Two steps to the left of -7 is 5.

12. Find the sum of each of the following:

(i) -34 + (-43) (ii) (-7) + (-5) (iii) (-12) + (-32)

(iv) (-6)-10 (v) (-13) - 20 (vi) -56 + (-12)

13. Find the difference of the following:

Grade: 7 Mathematics Holiday Home work 30 days March 2020

(i) 23-(7) (ii) 54 - (32) (iii) 83 - (-71) (iv) 43-(-89)
(v) 39 – (-72) (vi) (-89)- (-12) (vii) (-81) –(50) (viii) (-32) – (-13)

14. Find integers lying between 6 and -8. Arrange them in increasing order.

15. Arrange the following integers in the ascending order: -2, 1, 0, -3, +4, -5

16. Write five integers which are less than – 100 but greater than – 150

17. Find the integers lying between -15 and -22. Arrange them in descending order.

18. Find the sum of

(i)5 + 13+(-8)+(-9) (ii) (-24) + 20+(-14)+7 (iii) 4568+(-6235)+(77)+(-346)+74

19. Find: (i) (-10)-23-(-54)+12 (ii) 17 – (18)+24-36 (iii) 823 + (-956)-234 –(-325)
(iv) 750-(-830)-235+((-450)

DAY -7 Lines and angles

1. Define angle: Give example.

2. What are the types of angles? Mention them.

3. What is an complimentary angle.

4. What is an supplementary angle?

5. What are vertically opposite angles? Draw a diagram.

6. What is corresponding angles? Show it in picture.

7. What is linear pair?

8. What are parallel lines?

9. What are intersecting lines?

10. What is mean by perpendicular?

11. In a linear pair, if one angle is acute angle then what would be the other angle?

12. What is a right angle?

13. Draw a diagram for a) Supplementary angles. b) Complimentary angle. c) Linear pair.

DAY -8

1. Which of the following pairs of angles from a linear pair?

(*i*)71° and 109° (*ii*)66° and 110°

(*iii*)89° and 91° (*iv*)65° and 110°

3. What is the supplement of 121° ?

4. What is the complement of 87°

5. Are 23° and 87° complementary angles?

6. Do 120° and 60° from a linear pair?

7. Two liens are parallel if the _____ angles are supplementary.

8. The fig. 5.6 shows two parallel lines. A third line crosses the two parallel lines. The angles between the lines are marked with letters. Find:

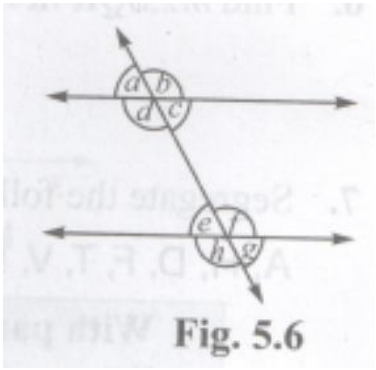


Fig. 5.6

(i) an angle that is vertically opposite to $\angle a$.
(ii) an angle that is alternative of $\angle f$.
(iii) the sum of the $\angle a$ and $\angle d$.
Give your answer in degrees.

DAY - 9

1. Based on the given fig. 5.7 fill in the blanks:

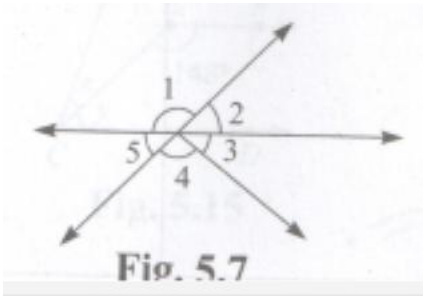


Fig. 5.7

(i) $\angle 1$ and $\angle 2$ are _____.
(ii) _____and_____ are vertically opposite angles.
(iii) um of $\angle 3, \angle 4$ and $\angle 5$ is _____.
(iv) _____ and _____ are adjacent angles.
(v) _____ and _____ form a linear pair.

2. In the fig.5.8, line m is parallel to line n and line l is a transversal. Fill in the blanks based on the fig. 5.8.

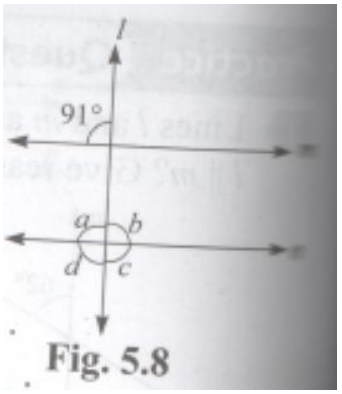


Fig. 5.8

(i) The measure of $\angle a$ is equal to _____ as corresponding angles on the same side of the transversal are _____ when a transversal intersects a pair of parallel lines.

(ii) $\angle a$ is equal to $\angle c$ as they are _____ angles.
(iii) $\angle a$ and $\angle b$ are pair of ____ angles, therefore the measures of $\angle b$ is _____.

(iv) $\angle c$ and $\angle d$ are pair of _____ angles, therefore the measure of $\angle d$ is _____.

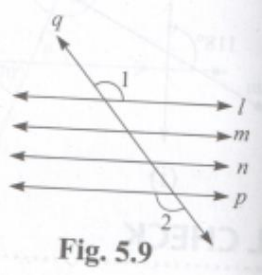


Fig. 5.9

3. In the fig. 5.9, lines l, m, n and p are four parallel lines and line q is transversal. What is the measure of $\angle 2$ if $\angle 1 = 127°$

Grade: 7 Mathematics Holiday Home work 30 days March 2020

4. Based on the fig.5.10, match the following pair of angles in part A with that of their names in part B.

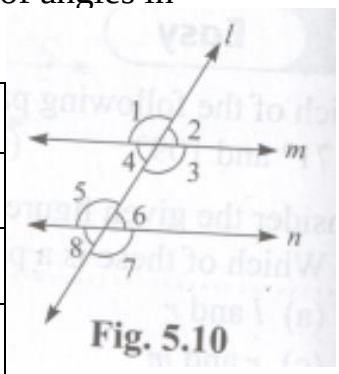


Fig. 5.10

Part A	Part B
(*i*)∠1 and ∠3	(a) Corresponding angles
(*ii*)∠2 and ∠8	(b) Supplementary angles
(*iii*)∠4 and ∠6	(c) Linear pair
(*iv*)∠5 and ∠6	(d) Alternate exterior angles
(*v*)∠6 and ∠7	(e) Vertically opposite angles
(*vi*)∠1 and ∠5	(f) Alternate interior angles.

5. Are the lines parallel in the fig. 5.11? Justify your answer.

6. Find m $\angle SQR$ in fig. 5.12.

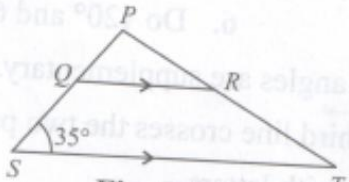


Fig. 5.12

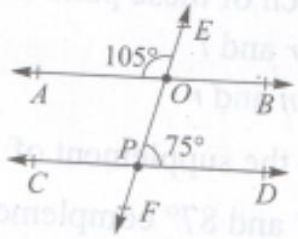


Fig. 5.11

7. Segregate the following letters of the English alphabet among the four columns as given:

A, H D, F, T, V, K, M, W, L, X, S, Q, E

With parallel line segments	With perpendicular line segments	With both of them	With neither of them

8. Give two methods to find the measure of angle 8 in fig.5.13 if it is given that ∠1 is 50°

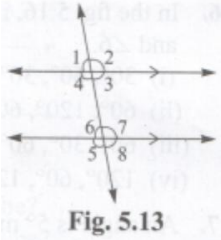


Fig. 5.13

DAY -10.

1. Define triangle. 2. Mention the types of triangle on the basis of size and angle.

3. Define equilateral triangle. Draw an example.

4. Define isosceles triangle. Draw an example.

5. Define scalene triangle. Draw an example.

6. Define median of triangle.

7. Define altitude of triangle.

8. Write the difference between median and altitude.

9. Define (a) acute angle triangle (b) right angled triangle. (b) Obtuse angled triangle.

10. Write sum of all the angles of a triangle.

11. Write the difference between interior and exterior angles.

12. State angle sum property and exterior angle property.

13. How can you identify the type of triangle using angles?

14. In $\triangle ABC$ $\angle A = 60°$ and $\angle B = 55°$. Find $\angle C$.

15. In $\triangle XYZ$ $\angle Y = 90°$. identify the type of triangle.

16. If isosceles triangle has equal angles $60°$, find the vertex angle.

DAY - 11

1. (i) Identify the correct vertices of the given triangle.

a) Q and B b) C, T and A c) B, S and C d) A, B and C.

(ii) Identify the correct three sides of the given triangle.

a) AB, TP and AC b) BC, AC and AB c) BC, ST and AB d) PQ, CB and AC.

(iii) Identify the correct name of angles in the given triangle formed at the vertices.

a) $\angle ABC, AQC$ and $\angle BTP$ b) $\angle BAC, \angle BCA$ and $\angle ABC$

c) $\angle TPC, \angle ACB$ and $\angle CBA$ d) $\angle ASB, \angle ACB$ and $\angle CBA$

2. In a triangle ABC, sides AB and AC are such that AB = AC. Then which of these is always true?

(i) $\angle B = \angle C$ (ii) $\angle A = \angle B = \angle C$ (iii) $\angle C = 90°$ (iv) $\angle A = 90°$

3. Identify the equilateral triangle from the given fig. 6.4 on the basis of their sides.

4. Identify the right-angled triangle in the given fig.6.5.

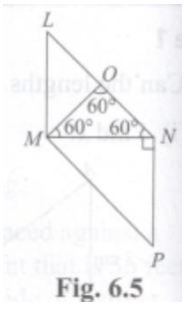


Fig. 6.5

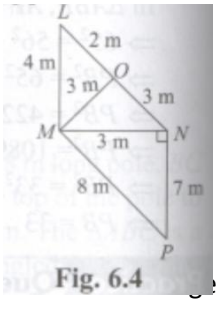


Fig. 6.4

Grade: 7 Mathematics Holiday Home work 30 days March 2020

5. ABC is a triangle with $\angle A = 45°$ and $\angle C = 62°$. Find the measure of $\angle B$.

6. In $\triangle ABC, DE$ is drawn parallel to BC.
Find the unknown measures of x, y and z in the following fig. 6.6.

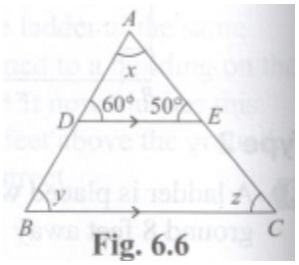
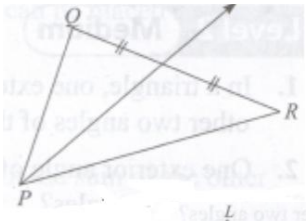


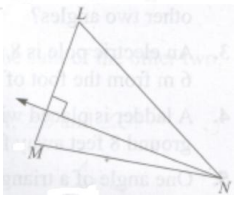
Fig. 6.6

7. (i) Can the three angles $53°, 79°$ and $45°$ be the angles of a triangle?
(ii) Can the three angles $65°, 82°$ and $35°$ be the angles of a triangle?
(iii) Can the lengths 5cm, 9cm and 13cm be the dimensions of a triangle?
(iv) Can the lengths 6cm, 8cm and 15cm be the dimensions of a triangle?
(v) Can the lengths 15cm, 8cm and 17cm be the dimensions of a right triangle?
(vi) Can the lengths 40cm, 42cm and 9cm be the dimensions of a right triangle?

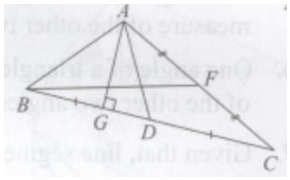


8. What is the name of the line passing through the vertex P?

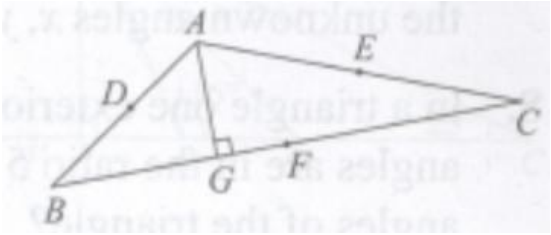
9. What is the name of the line passing through the vertex N?



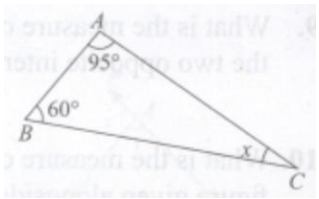
10. Identify the altitudes and medians in given $\triangle ABC$.



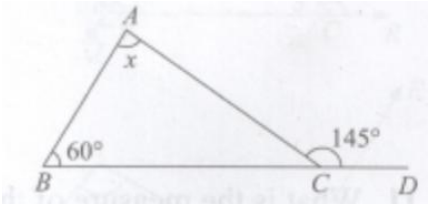
11. Given alongside is a triangle ABC.
The points D,E and F are the mid points of sides AB, AC and BC respectively. Identify the altitude and median in $\triangle ABC$ from vertex A.



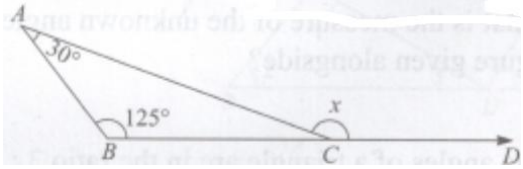
12. What is the measure of the unknown angle x in $\triangle ABC$ given alongside?



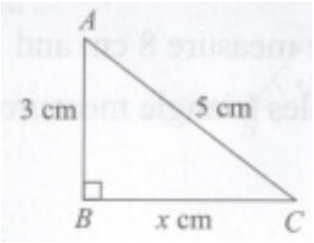
13. What is the measure of the unknown angle x in $\triangle ABC$ given alongside?



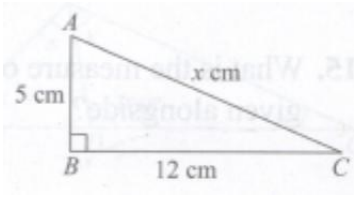
14. What is the measure of the unknown angle x in $\triangle ABC$ given alongside?



15. What is the measure of the unknown side x in $\triangle ABC$ given alongside?



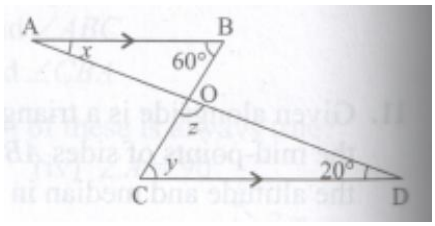
16. What is the measure of the unknown side x in the given $\triangle ABC$?



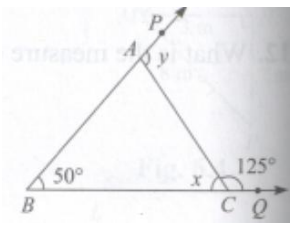
17. Three numbers a, b and c from a Pythagorean triplet. If a = 8, b = 15, find c if c is the largest number of the three numbers.

Day - 12

1. In a triangle, one exterior angle is $125°$. If one of the opposite interior angle is $50°$, which are the other two angles of the triangle?
2. One exterior angle of a triangle is $85°$. If one of the opposite interior angles is $75°$, which are the other two angles?
3. An electric pole is 8m high. A steel wire is tied from its top to a point on the ground at a distance of 6m from the foot of the pole. What is the length of the wire?
4. A ladder is placed with one edge on the wall 15 feet above the ground and the other end on the ground 8 feet away from the wall. What is the length of the ladder?
5. One angle of a triangle is $70°$. The other two angles of the triangle are in the ratio 5 : 6. What is the measure of the other two angles of the triangle?
6. One angle of a triangle is $80°$ and the remaining two angles are in the ratio 2 : 3. What is the measure of the other two angles of the triangle?
7. Given that, line segment $AB \| CD$.
   What are the measures of the unknown angles x, y and z in the figure given alongside.

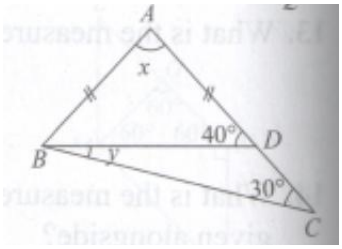


8. In a triangle one exterior angle is $110°$. The two opposite interior angles are in the ratio 5 : 6. What is the measure of the three angles of the triangle?
9. What is the measure of the three angles of a triangle if one exterior angle of the triangle is $70°$ and the two opposite interior angles are in the ratio 2 : 5?
10. What is the measure of the unknown angles x and y in the figure given alongside?



Grade: 7 Mathematics Holiday Home work 30 days March 2020

11. What is the measure of the unknown angles x and y in the figure given alongside?



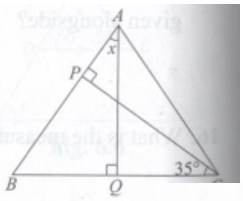
Day – 13

1. The angles of a triangle are in the ratio 3 : 4 : 2. What is the measure of the angles of the triangle?

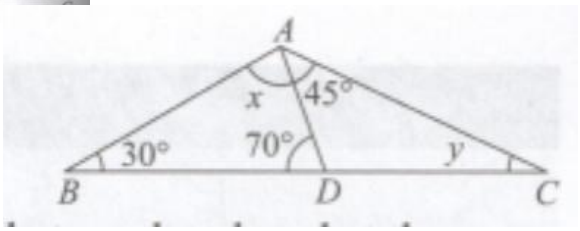
2. Two sides of a triangle measure 8 cm and 11cm. What is the range for the measure of the third side?

3. Two sides of an isosceles triangle measure 5cm and 12cm. What is the measure of the third side of the triangle?

4. What is the measure of the unknown angle x in the figure given alongside?



5. What is the measure of the unknown angles x and y in the figure given alongside?



6. A box measures 7 feet by 24 feet. What is the length of the largest rod that can be placed at the bottom of the box?

7. Define congruency.

8. State a) SAS criteria, b) SSS criteria, c) ASA criteria, d) RHS criteria.

9. Draw any five congruent diagrams.

Day – 14.

1. In a triangle, what is the line segment that joins a vertex of a triangle with the mid point of the opposite side called?

2. In a triangle, what is the line segment which joins a vertx of a triangle with a point on the side opposite to it and is perpendicular to that side called?

3. Which of the following are correct?

(i) If $\overline{AB}$ = 5.5cm, then $\overline{AB}$ is congruent to $\overline{CD}$

(ii) Two circles with radii 6cm and 3cm are said to be congruent to each other.

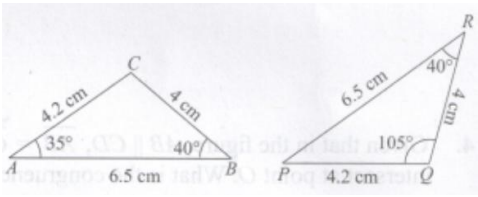
(iii) A rectangle with length 10cm and breadth 6cm and a rectangle with length 10cm and breadth 6 cm are said to be congruent to each other.

(iv) Two angles, $\angle B = 60°$ and $\angle A = 6°$ are said to be congruent to each other.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

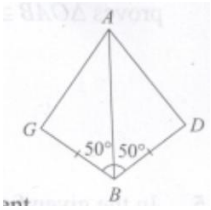
4. Fill in the blanks.

If $\triangle ABC \cong \triangle PRT$ then, $\overline{AB} = \_\_\_\_\_, \angle B = \_\_\_\_\_$

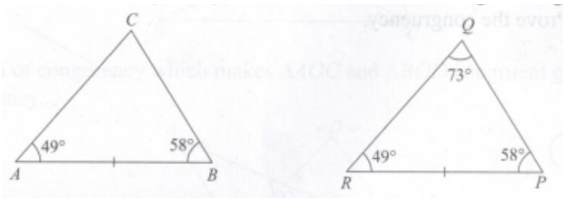


5. The two given triangles are congruent.
Write the correct condition that symbolizes the congruency in the correct order of matching.

6.Write the correct condition of congruency which makes $\triangle ABG$ and $\triangle ABD$ congruent.



7. Write the correct condition of congruency which makes the two triangles congruent.



Day – 15. Powers and Exponents.

1. Define exponent and power.

2. Express the given number in exponential form
a) 4096, b) 216, c) 15625, d) 729, e) 128, f)1331.

3. Find the value of 2^6, 9^3, 11^2, 5^4

4. Express the following in exponential form.

a) 6 x 6 x 6 x 6 b) t x t x t c) 5 x 5 x 5 x 7 x 7 x7 d) a x a x a x c x c x c x c x d.

5. Identify the greater number.

a) 4^3 or 3^4 b) 5^3 or 3^5

6. Express the following as a product of powers of their prime factors:

a) 648 b) 405 c) 540 d) 3600

7. Simplify: a) 2 x 10^3 b) 7^2 x 2^2 c) 2^3 x 5 d) 3^2 x 10^4

8. Simplify: a) $(-4)^3$ b) (-3) x $(-2)^3$ c) $(-3)^2$ x $(-5)^2$

9. Write all the laws of exponents.

10. Simplify: $(-4)^{100}$ x $(-4)^{20}$

DAY – 16

1. (i) Which of these represents 5^{89} x 5^{54} in exponential form?

a) 5^{139} b) 5^{142} c) 5^{143} d) 5^{145}

(ii) Which of these represents $(-4)^{66}$ x $(-4)^{44}$ in exponential form?

a) $(-4)^{110}$ b) $(-4)^{112}$ c) $(-4)^{114}$ d) $(-4)^{116}$

2. (i) Which of these represents $\frac{23^{207}}{23^{158}}$ in exponential form?

a) 23^{43} b) 23^{45} c) 23^{47} d) 23^{49}

(ii) Which of these represents $\frac{(-34)^{83}}{(-34)^{67}}$ in exponential form?

a) $(-34)^{14}$. b) $(-34)^{16}$. c) $(-34)^{18}$. d) $(-34)^{20}$.

3. (i) (3)21 x (5)21 expressed in exponential form is:

a) 15^{17}. b) 15^{19}. c) 15^{21}. d) 15^{23}.

(ii) $(-7)^{32}$ x $(-9)^{32}$ expressed in exponential form is :

a) 63^{32}. b) 64^{34}. c) 65^{36}. d) 66^{28}.

4. (i) Which of these is equal to 345.2 x 10^8?

a) 335100000000 b) 34520000000 c) 35530000000 d) 36540000000

(ii) Which of these is equal to 567.89 x 10^6?

a) 56789000 b) 57890000 c)567890000 d)5678900000

5. (i) Simplify: $(3)^2$ x $(5)^3$ (ii) Simplify 4^3 x 5^4

6. (i) What is the exponential form of 6561? (ii) What is the exponential form of 3125?

7. (i) If 2187 is expressed in exponential form, what is the base and the exponent?

(ii) If 1024 is expressed in exponential form, what is the base and the exponent?

8. (i) What is the value of (4 x 10^5) + (3 x 10^2) + (7 x 10^0)?

. (ii) What is the value of (3 x 10^5) + (8 x 10^3) + (1 x 10)?

9. (i) Write 432 as product of powers of their prime factors.

(ii) Write 10125 as product of powers of their prime factors.

DAY – 17. Integers.

1. Give one example for closure property under addition and subtraction.

2. Give examples for commutative property for addition and subtraction.

3. What is associative property of addition and subtraction.

4. What is additive identity?

5. Write a pair of integers whose sum gives: a) a negative integer b) zero
c) an integer smaller than both the integers.

6. Product of two negative integers is _____.

7. Product of a positive and negative integer is _____.

8. Product of 3 negative integers is _____.

9. Product of an integer, zero is _____.

10. What is associative property of multiplication?

11. What is distributive property of multiplication over addition?

12. What is distributive property of multiplication over subtraction?

1. If a and b are two integers, then which of the options below show the commutative property of addition for a and b?

(i) a + b = b + a (ii) a+0=a (iii) a+b = c (iv) a+(b+c)=(a+b)+c

2. Which of the options below show the associative property of addition of integers taking a, b and c as three integers?

a) a + b = b + a (ii) a+(b+c) = (a+b)+c (iii) a+0=a (iv) a + b = c

3. What is the additive inverse of 666? 4. What is the additive identity of -6?

5. What is the additive identity of 12? 6. State true or false.

(i) 3215 x 311 = 311 x 3215 (ii) 0 x 15 = 15 x 0 (iii) -45 x (60 + 12)=(-45x60)+(45x12)

7. Evaluate:

(i) $1273 \div 67$ (ii) $1334 \div (-23)$ (iii) $-2556 \div 36$ (iv) $233 \div 0$ (V) $348 \div (-1)$ (vi) $-108 \div (-9)$

DAY – 18. Fraction and Decimals.

1. Define fraction. 2. Write the types of fraction.

3. Arrange the fraction $\frac{2}{5}, \frac{3}{10}, \frac{9}{14}$ and $\frac{16}{35}$ in ascending order.

4. Rohan solved $\frac{3}{7}$ part of an exercise, while Ramu solved $\frac{2}{5}$ of it. Who solved lesser part.

5. Convert the fraction $\frac{5}{6}, \frac{7}{9}, \frac{11}{12}$ into *like* fractions.

5. Add $\frac{3}{4}+\frac{1}{4}$ 6. Add $\frac{4}{5}+\frac{8}{15}$ 7. Subtract $\frac{3}{5}-\frac{4}{7}$ 8. Subtract $2-\frac{3}{5}$

9. Arrange $\frac{2}{9}, \frac{2}{3}, \frac{8}{21}$ in descending order. 10. Find the value of $14\frac{1}{2}-6\frac{1}{2}$

11. Define decimal number. Write example.

12. Mention the type of decimals with an example.

13. Add 291.45 and 62.291. 15. Subtract: 39.87 – 21.9.

16. Convert 0.24 into fraction. 17. Convert $\frac{2}{3}$ into decimal numbers.

DAY – 19

1. Express as rupees using the decimals. a) 49 paisa b) Rs.54.64 paisa. c) 249 paisa.

2. Multiply: a) 2 x $4\frac{1}{5}$. b) 5 x $2\frac{2}{3}$ 3. Divide : a) $2 \div \frac{8}{9}$ b) $1\frac{3}{5} \div \frac{1}{2}$

3. Which of the following decimal number is greater: a) 0.2 or 0.02 b) 0.9 or 0.11

4. Find the product: a) 1.3 x 4 b) 2.3 x 4.35. c) 56.3 x 1000.

5. Evaluate : a) $0.6 \div 0.3$ b) $0.16 \div 0.4$

6. If Radhika takes $2\frac{1}{3}$m. of cloth to make a shirt, how many shirts can Radhika make from a piece of cloth $9\frac{1}{3}$.

7. How many $\frac{2}{3}$Kg. pieces can be cut from a cake of weight 4 Kg..

8. Three boys earned a total of Rs.235.50. What was the average amount earned per boy.

9. If $\frac{2}{3}$ of a number is 10, then what is 1.75 times of the number.

10. The product of 2 decimal number is 2.2144. If one number of them is 0.64, then find the other decimal number.

11. When 0.02964 is divided by 0.004, what will be the quotient.

12. Convert $\frac{9}{20}+\frac{1}{4}$ into decimal form.

DAY-20

1. Choose the correct option for each of the following:

(i) Identify the reciprocal of : $\frac{2}{3}$ a) $\frac{3}{1}$ b) $\frac{1}{2}$ c) $\frac{3}{2}$ d) $\frac{2}{3}$

(ii) The quotient of $\frac{3}{4}\div\frac{9}{8}$ a) $\frac{2}{3}$ b) $\frac{3}{2}$ c) $\frac{27}{32}$ d) None of these.

(iii) What fraction is 300 mL of $1\frac{1}{2}$ litres? a) $\frac{1}{5}$ b) $\frac{20}{10}$ c) $\frac{2}{17}$ d) None of these.

(iv) How many graphs are there in $\frac{3}{5}$ of 4 Kilograms?

a) 2000g b) 2200g c) 2400g d) None of these.

(v) Veena has to distribute 3 L of juice equally into 8 glasses for her friends. What is the quantity of juice in each glass?

a) 375mL b) 240 mL c) $\frac{1}{8}$ mL d) None of these.

2. Choose the correct option for each of the following:

(i) Evaluate: $12.345\div100$ a) 12.345 b) 1234.5 c) 0.12345 d) 12345

(ii) Evaluate: 2.8 x 14 a) 151 b) 15.1 c) 1.51 d) 0.151

(iv) Fill in the bank: 65mm = _____ cm. a) 65cm b) 0.65cm c) 6.5cm d) 650cm.

(v) Fill in the blank: 625 paisa = Rs._____ a) 0.625 b) 62.50 c) 6.25 d) 62.5

3. Rearrange these fractions in ascending order. $\frac{9}{11},\frac{9}{7},\frac{9}{15},\frac{9}{13},\frac{9}{5}$

4. Evaluate: (*i*) $4\frac{12}{17}+2\frac{8}{9}$ (ii) $1\frac{7}{12}+13\frac{11}{16}$ (*iii*) $5\frac{2}{9}-2\frac{4}{9}-1\frac{1}{9}$

(*iv*) $2\frac{3}{5}+1\frac{4}{5}-3\frac{1}{5}$ (v) $\frac{14}{25}\text{x}\ \frac{20}{49}$ (*vi*) $\frac{9}{16}\ \text{x}\ \frac{8}{15}$

5. Evaluate:

(i) 13.87 + 12.65 (ii) 9.21 + 12.56 (iii) 9.48 – 8.85 (iv) 45.23 – 40.49.

(v) $12.345 \div 100$ (vi) 3.76 x 10 (vii) $5.763 \div 1000$ (viii) $12.45 \div 4$

DAY – 21. [Simple Equations]

1. Define variable and constant. 2. What is an equation? Give example.

3. Write the following statements in form of equations.

4. (a) The sum of three times of a number and 12 is 34. (b) $\frac{1}{4}$ of a number is 4 more than 6.

5. Sum of a number x and 4 is 9. 6. Two subtracted from y is 8

7. Ten times of a number is 70. 8. The number b divided by 5 gives 6

9. $\frac{3}{4}$ of a number is 15. 10. Seven times of a number plus 7 gets you 77.

11. $\frac{1}{4}$ of a number – 4 gives 4. 12. If you add 3 to $\frac{1}{3}$ of a number to get 30.

13.Which of the following statements is true?

(i) A variable has a fixed value. (ii) An algebraic expression must contain numbers, variables and symbols of mathematical operation.
(iii) x = 3 is a solution of the equation 5x = 15. (iv) All the above.

14. Which of the following statements is true?

(i) 3x + 7 = 9 is an algebraic expression. (ii) 3x + 7 = 9 is an algebraic equation
(iii) 3x + 7 = 9 is an algebraic term. (iv) None of the above.

15. Which of these is a root of the equation x + 3 = 15?

(i) x = 5 (ii) x = 11 (iii) x = 12 (iv) x = 18

16. Express the following statement as an algebraic equation and solve. If 5 is added to three times a number z the result is 42.

17. Solve: 7a + 25 = 15+9a 19. Solve: 8x + 9 = 96

19. Solve: 8x – 5 = 3x + 55 20. Solve: $\frac{x}{5}+3=\frac{x}{6}+12$

Grade: 7 Mathematics Holiday Home work 30 days March 2020

DAY - 22

1. Solve: $\frac{2}{9}(x+3)=4x-7$ 2.Solve: $4x+\frac{3}{5}=7-2x$ 3. Solve: $9x-\frac{4}{7}=12-3x$

4. Ratan is four times as old as Mita. If the sum of their ages is 20, find their ages.

5. Rahul's age is $\frac{1}{4}$ of Seema's age. If the difference of their ages is 24, then find their ages.

6. If two consecutive odd numbers add up to 64, then find the two numbers.

7. The length of a rectangular room is twice its breadth b. The perimeter is 180cm. Frame an equation to find the sides of the room.

8. A rectangular field is such that its length is one and half times its breadth b. The perimeter of the field is 200m. Frame an equation to find the sides of the field.

9. Frame an algebraic equation for the following:

   A chocolate shake costs Rs.25 more than a banana shake. The cost of 4 chocolate shakes and 5 banana shakes is Rs.775.

10. Eight more than 5 times a number is 78. Find the number.

DAY – 23

1. State true or false.

In an equation, if the RHS and LHS are interchanged, the value of the variable also changes.

2. Three-seventh of a number is greater than two-fifth of the number by 4.

(i) 140 (ii) 130 (iii) 150 (iv) 120

3. A man covers $\frac{1}{5}$ of the journey on foot, $\frac{2}{3}$ of the journey by car and the remaining 4 Km by taxi. Find the total distance covered by the man from the options given below:

(i) 22 Km (ii) 25 Km (iii) 30Km (iv) 24 Km.

4. Pranav had a basket of fruits. he gave $\frac{1}{4}$ of the fruits to a friend, $\frac{3}{5}$ of the fruits to his cousin and ate the remaining 6 fruits himself. Find the total number of fruits in the basket from the options given below:

(i) 40 fruits (ii) 60 fruits (iii) 20 fruits (iv) 80 fruits.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

5. Solve: $\frac{2y}{3}-\frac{5}{8}=\frac{3}{4}-\frac{y}{2}$ 6. Solve: $\frac{3y}{4}-\frac{2}{7}=\frac{3}{4}+\frac{y}{3}$ 7. Solve: $\frac{x}{2}+\frac{x}{4}=\frac{x}{6}+\frac{7}{6}$

8. Solve: (i) 2(3x-2)-3(4-5x)=7(1-2x)+12 (ii) Solve for x: 4(3x + 5)- 6(2 – x)=8(7+x)+22

9. Solve: (i) 0.4x + 2.7 = 2.9x – 3.55 (ii) 3.7x + 5.2 = 0.3x + 13.7.

10. Seven eighth of a number is greater than half the number by 9. Find the number.

11. Sudha is four times as old as Rita. After eight years, Sudha will be twice as old as Rita. Find their present ages.

12. Kiran is five times as old as her niece Poonam. After five years, Kiran will be thrice as old as Poonam. Find their present ages.

13. The sum of three consecutive multiples of 3 is 75. Find the three numbers.

14. Two complementary angles differ by $14°$. Find the angles.

15. In an isosceles triangle, each of the two equal sides is 10 less than three times the base. If the perimeter of the triangle is 330cm, find the lengths of the sides of the triangle.

16. A silk scarf is in the shape of an isosceles triangle. Each of the two equal sides of the scarf are 8 cm more than twice the third side. If the perimeter of the scarf is 71cm, find the lengths of the sides of the scarf.

DAY – 24 [Algebraic expressions]

1. What is an algebraic expression. Give example.

2. What is like and unlike terms? Define with an example.

3. Define with an example
   a) Monomial b) binomial c) trinomial d) quadrinomial. e) polynomial.

4. Draw a tree diagram for each expression.
   (i) $8y + 3x^2$ (ii) 7mn – 4. (iii) $2x^2y$ (iv) $4x^2-3y^2+9x-8y$

1. Identify which of the following pairs contain like terms.

(i) xy,3xy (ii) x^2, y^2 (iii) 5a, 5c (iv) All of these

2. What is the number of terms in the following algebraic expression?

$A^2 + b^2 – 2ab + 4bc$

3. What is the coefficient of b in $4a^2bc$? 4. What is the coefficient of a^2 in $6a^2b^2c$?

Grade: 7 Mathematics Holiday Home work 30 days March 2020

5. Identify the algebraic expressions given blow as monomials, binomials, trinomials or none of these:

Expression	Type
(i) $8a - 9b - 10c$	
(ii) $3x - 5y$	
(iii) $4q^2$	
(iv) $x^2 + 2x^2 + 3x^2$	

6. Identify which of the following pairs contain like terms.

(i) 3xy, -8yx (ii) $-x^2y$, $5xy^2$ (iii) 5ab, 5ac (iv) x^2,y^2

7. Identify which of the following pairs contain unlike terms.

(i) 7ab, -11ba (ii) 6xyz, - 3zyx (iii) $5xy^2$, $9xy^2$ (iv) ab^3, b^3

8. Find the value of the following algebraic expression given that x = -1, y = 2 and z = 3; $x^3 + y^3 + 3xyz$.

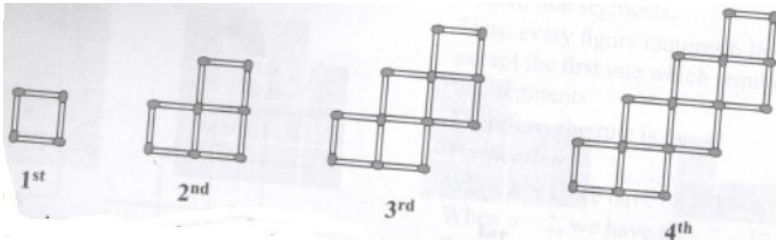
9. Add the algebraic expressions: $5ab - 5bc + 8ca$ and $3ab + 6bc - 4ca$.

10. Subtract $2x^2 - 5xy + 3y^2 + 5$ from $4x^2 + 3xy - 5y^2 + 9$

11. Subtract $5a^2 + 7ab - 2b^2 + 4$ from $7a^2 - ab + 2b^2$

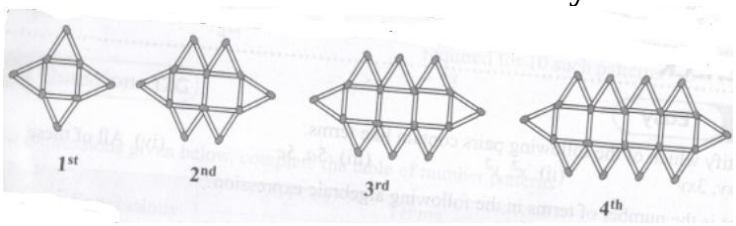
12. From the sum of $4xy + 3yz - 2xyz + 1$ and $xy - 2yz + xyz + 4$,
subtract $3xy + 2yz + 5xyz - 4$

13. Form the algebraic expression to find the number of matchsticks required to make the nth figure of the pattern given below. Also, find the number f matchsticks required to make the 12^{th} figure.



14. Form the algebraic expression to find the number of matchsticks required to make the nth figure of the pattern given below. Also, find the number f matchsticks required to make the 14^{th} figure.

Grade: 7 Mathematics Holiday Home work 30 days March 2020



DAY – 25

1. Simplify and then identify the number of terms in the following algebraic expression:

(i) $5x + 4y + 3xy – 4zx – 3x – 4y$ (ii) $a^2 + b^2 – 4ab + a – b – 2b^2$

2. (i) Identify the coefficient of a in the following expression: (2ab) (2ac)

(ii) Identify the coefficient of c in the following expression: - $(6c^2)(ca)$

3. For each pair of algebraic expressions gien below, determine whether expression 1 and expression 2 are equal (EQ) or not equal (NEQ):

Sl.No.	Expression 1	Expression 2	EQ or NEQ
(i)	2a -5b+c	2a – 3b + 2c – 2b –c	
(ii)	2a-5b + c	2x – 5y + z	
(iii)	5a – 3b + 2c	8a – b + 4c – 3a – 2b – 2c	
(iv)	2x – 3y + z	2a – 3b + c	

4. Add the following:

(i) $3a + 6a^2b + 4b$; $2b – 9ab^2$ -6a; -6a – 7b + $2a^2b$

(ii) $2x -3y+2x^2y$; $x - 2y – 2xy^2$; $x – y + 3x^2y$

5. (i) What must be added to $9a^3 + 8a^2 – 7a + 15$ to obtain $7a^3 – 9a^2 + 11a – 6$?

(ii) What must be added to $3a^3 – 9a^2 + a + 8$ to obtain $4a^3 – 3a^2 + 7a -2$?

6. (i) Subtract $2x^2 – 3xy$ from the sum of $x^2 – 3y^2 + 11$ xy and $y^2 – 4y^2 + 9xy$

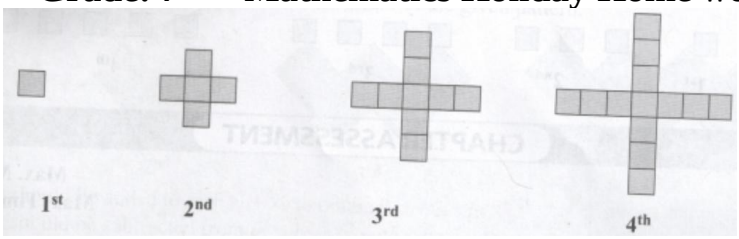
(ii) Subtract $a^2 – 3b^2 – 6xy$ from the sum of $3x^2 – y^2 + 8xy$ and $5y^2 – 3x^2$ -+ 3xy

7. What is the value of the given expression for x = 1 and y = -3?

5(2-3x) – 2(3y-3x).

8. Form an algebraic expression to find the number of squares required to make the nth figure of the pattern given below. Also, find the number f squares required to make the 14^{th} figure.

Grade: 7 Mathematics Holiday Home work 30 days March 2020



Day-26 Perimeter and Area.

1. What is Perimeter and area? Write their units.

2. Mention the three types of the figures with their definition.

3. What is square and rectangle.

4. Perimeter of the square _____.

5. Side of the square _____.

6. Area of the square _____.

7. Diagonal of a square _____.

8. Find the perimeter and the area of squares whose a) side is 2.5 m. b) side is 3.4 m.

9. Perimeter of rectangle _____.

10. Area of rectangle _____.

11. Diagonal of rectangle _____.

12. Find the area and perimeter of the rectangle whose
    a) length 5 m. and breadth 2.1 m. b) length 15 cm. breadth 8 cm.

13. Define circle. 14. Write the difference between diameter and radius.

15. Circumference of a circle is _____. 16. Area of the circle _____.

17. Find the perimeter and the area of a circle whose radius is 7 cm.

18. Area of triangle _____.19. Area of equilateral triangle_____

20. Perimeter of a triangle _____.

21. A triangle with base 3 cm. and height 5 cm. Find the area of triangle.

Grade: 7 Mathematics Holiday Home work 30 days March 2020

DAY – 27.

1. The perimeter of a rectangle is 250cm. If the length is 75cm, then what is its area? Choose the correct option.

(i) 3750 cm^2. (ii) 7500 cm^2. (iii) Cannot say (iv) None of these.

2. What will be the area of a parallelogram, whose base is 10cm long and the corresponding height is 4cm? Choose the correct option.

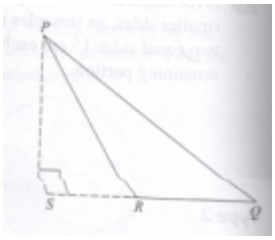
(i) 14 cm^2. (ii) 70 cm^2. (iii) 20 cm^2. (iv) 40 cm^2.

3. What will be the length of the base of a parallelogram whose area is 128sq.cm and height is 8cm? Choose the correct option

(i) 16cm (ii) 17cm (iii) 12cm (iv) None of these.

4. (i) Find the area of the triangle ABC in BD = 5cm and AC = 4cm.

(ii) Find the area of the triangle PRQ if PS = 8cm and RQ = 6cm.



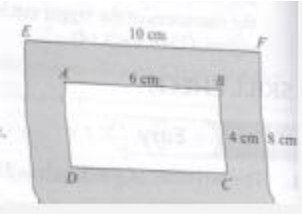
5. A triangle ABC has area 120 sq. cm and height AD = 15cm.
Find the length of the base BC.

6. Find the circumference of a circle with diameter 35cm $\left(Use\ \pi = \frac{22}{7}\right)$

7. Find the area of a circle whose circumference is 22cm.

8. Given that the area of a circle is 38.5 sq.m., find its circumference.

9. Find the area of the shaded region i the figure given alongside.



10. The perimeter of parallelogram is 64 cm. If one side measures 20cm, then find the measure of its adjacent side.

DAY - 28

1. Find the total surface area of a cuboidal box measuring 25cm by 40cm by 12cm.

2. If the total surface area of a cube is 864 cm^2, what is the measure of its side?

3. The curved surface area of a cylinder is 1584 sq.m and the diameter of the base is 18m. Find its height.

4. A rectangular water tank is 30m by 20m by 10m. How many litres of water can it hold?

5. Find the volume of a cylinder whose height is 20m and total surface area is 2092 sq.m.

6. A cylindrical tank can hold 5632 kL of water. Find the height of the tank if the radius of the base is 8m.

7. A box is 32cm long, 20cm wide, and 12cm high is open at the top. Find the cost of painting it at Rs.22 per sq. m.

8. A cube of side 5m is cut into cubes of sides 1m. Find the total surface area of the smaller cubes.

9. Find the radius of a cylinder which has the curved surface area of 2200sq.m and height 25m.

10. The length and height of a cuboid are 3 feet and 15 feet, respectively. If the volume of the cuboid is 450 cubic feet, what is the width of the cuboid?

DAY – 29. Comparing Quantities.

1. Define ratio and proportion. 2. What is profit? Give an example.

3. What is loss? Give an example. 4. What is discount?

5. Define percentage. 6. Convert $\frac{7}{25}$ into percentage.

7. Convert 0.04 into percentage. 8. Gain = SP - _____.

9. Loss = _____ - SP. 10. Gain % = $\frac{Gain}{\quad}$ x 100 11. Loss % = $\frac{Loss}{\quad}$ x 100

12. SP = $\frac{100 + gain\%}{100}$ x _____ 13. SP = $\frac{100 - gain\%}{100}$ x _____

14. CP = $\frac{100}{100 + gain\%}$ x _____ 15. CP = $\frac{100}{100 - loss\%}$ x _____

16.Which of these ratios is equivalent to 8 : 11?

a) 64 : 121 b) 40 : 55 c) 10 : 13 d) 24 : 44

17. Compare the ratios 2 : 9 and 3 : 11.

18. Find the ratio of 450mL to 1.5 L.

19. Riya's class consists of 24 girls and 9 boys. What is the ratio of the number of girls in the class to the total number of students?

20. A team of debaters consists of 15 girls and 9 boys. What is the ratio of the number of boys in the team to the total number of students in the group?

21. Priya and Anil share Rs.1696 in the ratio 3 : 5. How much did each get?

22. Pihu and Adil divide 714 marbles in the ratio 2 : 5. How many marbles did each of them get?

23. The height of 25 wooden boards is 17.5 inches. What is the height of 55 boards?

24. Peter is driving a truck at 60 Km/h. If he continues to drive at the same speed, how much time will he take to cover 12 Km?

25. Which of the following is equal to 19.07%.

(i) 1.097 (ii) 0.1907 (iii) 1907 (iv) None of these.

25. Which of the following is equal to 11.3%?

(i) 1.13 (ii) 0.113 (iii) 0.0113 (iv) None of these.

27. Write $\frac{3}{20}$ in percentage form.

28. Write 34.765 in percentage form.

29. (i) 15% of 7500 g = _____ g. (ii) 18% of 12600 Km = _____ Km.

30. Anjali attempts 30 questions in a test. She got 18 answers correct. What percentage of answers has she got correct?

31. Sangeeta had 450 stamps in her collection. She gave 90 stamps to her sister. What percentage of stamps did she give to her sister?

32. Shreya bought a camera for Rs.12600 and sold it to Priya for Rs.14364. Find the gain per cent.

33. A painting was bought for Rs.650 and sold for Rs.754. Find the gain and gain per cent.

34. The price of a table was increased by 12% to Rs.16800. Find the price before the increase.

35. A shopkeeper increased the price of a watch by 15% to Rs.25300. Find the price of the watch before the increase.

36. What will be the cost price of an item which is sold for Rs.187 after a loss of 15%?

37. Rachit sells a television for Rs.26,600. He loses 5% of the CP in the bargain. What was the price at which he bought it?

38. Find SP of shirt for which the cost price is Rs.650 and the gain is 6%.

39. Find the SP of a fan for which the cost price is Rs.1200 and the gain is 8%.

40. Find the simple interest on Rs.3500 at 4% p.a for 5 years.

41. Find the simple interest on Rs.4300 at 6% p.a for 3 years.

42. Find the principal if the interest is Rs.2800 at 8% p.a for 3 years.

43. Find the principal if the interest is Rs.360 at 5% p.a for 4 years.

44. Find the time in which Rs.2700 will yield an interest of Rs.324 at rate of interest 4% p.a.

45. Find the rate of interest if the interest on Rs.2200 for 3 years is Rs.330.

46. Raman ordered a TV for Rs.35000. He had to pay Rs.1000 for getting it delivered. After 2 months he sold it at a loss of 5%. Find the selling price.

DAY – 30 Practical Geometry.

1. Draw a line segment AB. Mark a point P4cm above the line segment. Draw a line segment parallel to AB through P.

2. Construct $\triangle ABC$ with AB = 4.5 cm, BC=7cm and CA=6cm.
3. Construct a right-angled triangle with hypotenuse 13cm long and one of the perpendicular sides of length 15cm.
4. Construct a triangle PQR with sides PQ = 4cm, QR = 5cm and $\angle PQR = 100°$.

Level 2 (Medium)

1. Construct an isosceles triangle with equal sides of length 6cm each and the base of length 5cm.
2. Construct two isosceles triangles ABC and DBC, with common base BC and the points A and D on opposite sides of BC, given the BC = 8cm, AB=AC=4.5cm and DB=DC=5cm.
3. Construct a parallelogram PQRS with $\angle P = 75°$ and adjacent sides PQ = 7 cm and PS = 5.5cm.
4. Draw $\triangle ABC$ with AB = 5cm $\angle A = 60°, \angle B = 75°$