



DAV PUBLIC SCHOOL, JHARSUGUDA

QUESTION BANK

Term 1

SUB – MATHEMATICS

CLASS – VIII

CH-1.SQUARES AND SQAURE ROOTS

1 Mark Questions

1. The least numbers which must be subtracted from 4360 to make it a perfect square is ____.
2. If $140\sqrt{x}+315 = 1015$, then x is equal to ____.
3. The value of $(0.9)^2 - (0.1)^2$ is ____.
4. The greatest number of 4 digit which is a perfect square is ____.
5. The least square number which is exactly divisible by 10,12,15 and 18 is ____.
6. How many non-square numbers are there between 20^2 and 21^2 ?
7. How many square numbers are there between 1 and 50 .
8. How many zeroes are there in the cube of 1000?
9. What is the value of $\sqrt[2]{176 + \sqrt{2401}}$
10. What is the sum of first six odd natural number?

2 Marks Questions

1. Find the square root of 144 by the method of repeated subtraction.
2. The area of a square field is 8281 m^2 . Find the length of its side.
3. Find the square root of $4\frac{53}{169}$
4. Simplify $(\sqrt{81} + \sqrt{0.81} + \sqrt{0.0081}) \times \sqrt{10000}$
5. Find a Pythagorean triplet corresponding to $n=5$.
6. Is 900 a perfect square? How?

3 Marks Questions

1. Find the smallest number by which 1800 must be multiplied so that it becomes a perfect square. Also find the square root of the perfect square so obtained.
2. Is 2352 a perfect square? if not, find the smallest number by which 2352 must be multiplied so that the product is a perfect square. Find the square root of new number.
3. 1225 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.
4. Find the smallest number by which 3645 should be divided so as to get a perfect square. Also, find the square root of the number so obtained.
5. Find the square root of 7744 by prime factorization method.
6. Find the square root of 39204.
7. Find the greatest four digit number which is a perfect square.

8. For each of the following numbers, find the smallest number by which we divide it so as to get a perfect square. Also find the square root of the square numbers so obtained.
- (a) 37845 (b) 2800 (c) 45056
9. The students of Class VIII of a school donated Rs 2401 for Prime Minister National Relief Fund. Each student donated as many rupees as the number of students in the Class. Find the number of students in the Class.
10. There are 500 children in a school. For a P.T. drill they have to stand in such a manner that the number of rows is equal to number of columns. How many children would be left out in this?
11. Using prime factorization, find the square root of 7056.
12. Find the greatest number of 6 digits which is a perfect square plot.
13. Find the square root of 7 upto 3 decimal places.
14. Find the square root of $2\frac{1}{12}$ correct to 3 decimal places.
15. Find the square root of: 0.00126736 by division method.
16. A school collected Rs 2304 as fees from its students. If each student paid as many rupees as there were students in the school, how many students were there in the school?
17. 2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.
18. 10404 students are sitting in a lecture room in such a manner that there are as many students in a row as there are rows in a lecture room. How many students are there in each row of a lecture room?
19. Find a Pythagorean triplet corresponding to $n=5$.
20. Find the least number of 5 digits which is a perfect square.
21. Find the approximate length of the side of a square whose area is equal to the area of a rectangle, with sides 15cm and 16cm.
22. The area of a square field is $2\frac{113}{256}$ square metres. Find the length of the side of the field.

4 Marks Questions

1. Find the square of 2.5 correct upto 3 decimal places.
2. Find the square root of $2\frac{1}{12}$ correct to 3 decimal places.
3. Find the square root of 90 by Estimation method.
4. The area of a square field is 5184 m^2 . A rectangular field, whose length is twice of its breadth, has its perimeter equal to the perimeter of the square field. Find the area of the rectangular field.

- The cost of leveling a square field at Rs.15 per square metre is Rs.19935. Find the cost of fencing the field at Rs.22 per metre.
- If $\sqrt{2}=1.414$, $\sqrt{3}=1.732$, $\sqrt{5}=2.236$, find the value of i) $\sqrt{72} + \sqrt{48}$ ii) $\sqrt{\frac{125}{64}}$
- The product of two numbers is 1296. If one of the number is 16 times other, find the number.
- Find the three numbers in the ratio 2:3:5, the sum of whose square is 608.

CH-2.CUBES AND CUBE ROOT

1Mark Questions

- Show that 46656 is a perfect cube.
- What is the ones digit in the cube of 38 ?
- Find the sides of a cubical box whose volume is 64 cm^3 .
- How many perfect cubes are there between 1 and 1000?.
- Is the cube of 4913 an odd number? Why?
- Volume of a cube is 9261 cm^2 . Find its edge.
- Find the cube root of 0.064.
- $1\text{km}^3 = \underline{\hspace{2cm}} \text{cm}^3$.
- The cube of any multiple of 3 is always divisible by _____.
- Find the cube of 0.2.
- Is 9000 a perfect cube?
- Write all the digits that would appear as the last digits of their respective cubes.

2 Marks Questions

- By which smallest number should 42592 be divided so that the quotient is a perfect cube?
- By which smallest number should 704 be divided to obtain a perfect cube?
- Show that 384 is not a perfect cube.
- By which smallest number should 648 be multiplied so that the product is a perfect cube?
- Find the number whose cube is 27000.
- Find the cube root of -3375 .
- Find the cube root of the number 614125 using prime factorization method.
- Find the cube of square of 0.2

3 Marks Questions

- Find the smallest natural number by which 392 must be multiplied so that the product is a perfect cube .
- Find the cube root of $27 \times (-2744)$
- Show that 0.001728 is a cube root of a rational number
- Multiply 10584 by the smallest number so that the product is a perfect cube.
- The volume of a cube is 4096 cu.m . Find the length of the side of cube.
- Find the cube root of the number 110592 by the estimation method.
- Evaluate: $\sqrt[3]{3375 \times (-729)}$
- Find the volume of a cube, one face of which has an area of 81 m^2 ?
- If the surface area of a cube is 486 cm^2 , find its volume.
- Find volume of a cube whose surface area is 96 cm^2 .

- Find the number by which 68600 must be multiplied to get a perfect cube.
- What is the smallest number by which 288 must be multiplied so the product is a perfect cube?
- Show that if a number is doubled, then its cube becomes eight times the cube of the given number.
- Which smallest natural number should divide 1188 so that the quotient is a perfect cube?
- Is 292 a perfect cube? If not, find the smallest natural number by which it must be multiplied so that the product is a perfect cube.

4 Marks Questions

- Find the smallest number which multiplied with 3600 will make the product a perfect cube. Further, find the cube root of the product.
- Find the approximate length of the side of a cube whose volume is equal to a cuboid having dimensions 100m, 11m and 9m ?
- Divide the number 52728 by the smallest number so that the quotient is a perfect cube. Also find the cube root of the quotient.
- Prove that if a number is tripled, then its cube is 27 times the cube of the given number.
- Evaluate : $\sqrt[3]{\frac{0.008}{0.027}} \div \sqrt[3]{\frac{729}{512}} \times \frac{27}{16}$
- Difference of two perfect cube is 189. If the cube root of the smaller of the two number is 3, find the cube root of the larger number.
- Three numbers are in the ratio 1:2:3 and the sum of their cubes is 4500. Find the numbers.
- Find the area of one face of a cube if its volume is 512 cm^3 .

CH-4.DIRECT AND INVERSE VARIATION

1 Mark Questions

- Do x and y vary directly in the given table?

X	4	20	30	40	60	80
Y	2	8	10	15	20	25

- If y is directly proportional to $1/x$ and $x=2$ when $y=20$ what is the value of x when $y=1.25$?
- If x and y vary inversely and $y=45$. Find x when constant of variation=9
- What do you mean by direct and inverse variation?
- If $x=5y$, then x and y vary _____ with each other.
- If $xy=10$, then x and y vary _____ with each other.
- x and y are in direct variation. If $y=10$ then $x=5$. Find the value of y when $x=10$.
- Time taken to cover a distance by a car and speed of the car are said to be in ----- variation.
- x and y are in inverse proportion. If $y=15$ then $x=3$, find the value of y when $x=9$.
- Time taken to cover a distance by a car and speed of the car are said to be in ----- variation.

3 Marks Questions

- If 12m of a uniform iron rod weights 42 kg. What will be the weight of 6m of same rod?
- A train 360m long is running at a speed of 45 km/hr. What time will it take to cross a 140m long bridge?
- A train 210m long took 12 seconds to pass a 90 m long tunnel. Find the speed of the train.
- 68 boxes of certain commodity require a shelf- length of 13.6 m. How many boxes of the same commodity would occupy a shelf- length of 20.4 m?
- 11 men can dig 6.75m m long trench in one day. How many men should be employed for digging 27m long trench of the same type in one day?
- A worker is paid Rs.210 for 6 days work. If his total income of the month is Rs. 875, for how many days did he work?

7. If 12m of a uniform iron rod weights 42 kg. What will be the weight of 6m of same rod?
8. If the speed of a train be 92.4 km/h, how many meters would it cover in 20 minutes
9. 5 bags of rice weigh 150 kg. How many such bags of rice will weigh 900 kg?
10. If 20 men can reap a field in 8 days, then 16 men will reap the same field in how many days?
11. 6 pumps working together empty a tank in 28 minutes. How long will it take to empty the tank if 4 pumps working together?
12. Walking at the $\frac{3}{4}$ th of his usual speed a man is late by $2\frac{1}{2}$ hours . Find his usual time?
13. If a train 120m long crosses a man in 15 seconds .Then find the speed of the train.
14. A train 210m long took 12 seconds to pass a 90m long tunnel. Find the speed of the train.

4 Marks Questions

1. 120 men had food provisions for 200 days. After 5 days, 30 men die due to an epidemic. How long will the remaining food last?
2. A car can finish a certain journey in 10 hours at the speed of 48km/hr. By how much should its speed be increased so that it may take only 8 hours to cover the same distance?
3. In a hostel of 50 girls, there are food provisions for 40 days. If 30 more girls join the hostel, how long will these provisions last?
4. A train 400m long is running at a speed of 72km/hr. How much time does it take to cross a telegraph post?
5. If 5 men or 7 women can earn Rs. 875 per day, how much would 10 men and 5 women earn per day ?
6. The cost of 16packets of salt, each weighing 900 g, is Rs 84. Find the cost of 27packets of salt, each weighing 1kg.
7. If 3persons can weave 168 shawls in 14 days, how many shawls will be woven by 8 persons in 5days?
8. If the cost of transporting 160kgof goods for 125 km is Rs 60. What will be the cost of transporting 200kg of goods for 400km?
9. 6 oxen and 8 cows can graze a field in 28days. How long would 9oxen and 2cows take to graze the same field?
10. 6 men working 8 hours a day, earn Rs 8400per week. What will be the earning per week of 9 men who work for 6 hours a day?
11. A motor boat covers 20 km in 4 hours. What distance will it cover in7 hours (speed remaining the same) ?
12. Find 'a' in the following table. When

X	2	5
Y	10	a

(i) x,y vary directly (ii) x,y vary inversely

13. A train is moving at a uniform speed of 72 km/h .How far will it travel in 25 minutes? Find the time required to cover adistance of 216 km?
14. A school has 8 periods a day each of 45 minutes duration. How long would each period be, if the school has 9 periods a day, assuming the number of school hours to be the same.
15. A garrison of 500 men had provision for 60 days. A reinforcement of 500 men arrived, the food will now last for how many days.
16. A fort had provision for 300men for 90days. After 20days, 50men left the fort. How long would the food last at the same rate?

17. A certain number of men finish a piece of work in 100 days. If however there were 10 men less, it would take 10 days more for the work to be finished. How many men were these originally?
18. How long a train 120m long take to clear a platform 130m long, if its speed is 50km/h?
19. A shopkeeper has enough money to buy 40 books, each costing Rs125. How many books he can buy if he gets a discount of Rs25 on each book?
20. Ravi starts for his school at 8:20a.m. on his bicycle.If he travels at a speed of 10 km/hr, then he reaches his school late by 8 minutes but on travelling at 16 km/hr he reaches the school 10 minutes early. At what time does the school start ?
21. Ms. Amisha has to drive from Jhareda to Ganwari. She measures a distance of 3.5 cm between these village on the map. What is the actual distance between the villages if the map scale is 1 cm = 10 km ?

CH – 5 PROFIT, LOSS AND DISCOUNT

1 Mark Questions

1. The marked price of a book is Rs.250 and 5% discount is given. Find the selling price of the book.
2. By selling a bag for Rs180, a shopkeeper loses Rs.20. Find the cost price of the bag.
3. C.P. of a pair of shoes is Rs350. If VAT is Rs.50, find the S.P. of the a pair of shoes.
4. If S.P. of a shirt is Rs.500 and loss is Rs.50, Find the C.P. of the shirt.

2 Marks Questions

- 1 If by selling an article for Rs100, a man gains Rs15 then find his gain percent.
- 2 Marked price of a frock is Rs220. A discount of 20% is announced on it. What is the amount of discount.
- 3 A towel is marked at Rs50 and VAT charged on it is 5%. Find the selling price of towel.
- 4 What is the loss percent if a man loses Rs.10 on selling an article for Rs100?
- 5 Reena purchased a dress for Rs5400 including 8% VAT. Find the price of the dress before VAT was added.
- 6 Find the rate of discount when M.P. =Rs1000 and S.P. =Rs750 .

3 Marks Questions

- 1 When a commodity is sold for Rs.174, there is a loss of 25%. What is the cost price of the commodity ?
- 2 Henry sold a bicycle at 8% gain. Had it been sold for Rs 75 more, the gain would have been 14 %. Find the cost price of the bicycle.
- 3 Mike sold a watch at a loss of 5%. Had he sold it for Rs 104 more, he would have gained 8%. Find the selling price of the watch.
- 4 A reduction of 20% in the price of sugar enables Mrs. Jones to buy an extra 5 kg of it for Rs 320.
- 5 Calvin purchased some candles at 3 for Rs 5 and sold them at 5 for Rs. 12. Thus, Calvin gained Rs 143 in all. How many candles did Calvin purchase?
- 6 A carpenter gets Rs 470 more if instead of selling a Chair at a loss of 10%, it is sold at a gain of 10%. Find the cost price of the Chairs.
- 7 A cycle was sold at a gain of 10%. Had it been sold for Rs 65 more, the gain would have been 14%. Find the cost price of the cycle.
- 8 If the selling price of an air conditioner is equal to $\frac{11}{3}$ of its cost price, find the gain per cent.

9. By selling an umbrella for Rs 115.20, Ken loses 10%. At what price must he sell it to gain 5%?
10. By selling a table for Rs 322, a carpenter gains 15%. At what price should he sell it to gain 25%?
11. A television is sold for Rs 3120 at a loss of 4%. Find the gain or loss percent if the television is sold for Rs. 3445.
22. If cost price of 18 mangoes is the same as the selling price of 16 mangoes , find the gain percent.

4 Marks Questions

1. Lucy sold two skirts for Rs 2185 each. On one she lost 5%, while on the other she gained 15%. Find her gain or loss per cent in the whole transaction.
2. A person sold two refrigerators for Rs 990 each. In one refrigerator he gains 10% and on the other refrigerator he loses 10%. Calculate his gain or loss per cent in the whole transaction.
3. A grocer bought tea which cost Rs 4500. He sold one-third of tea at a gain of 10%. At what gain per cent must the remaining tea be sold to have a gain of 12% on the whole?
4. Aaron buys a plot of land for Rs 96000. He sells $\frac{2}{5}$ of it at a loss of 6%. At what gain percent should he sell the remaining part of the plot to gain 10% on the whole?
5. By selling a bed sheet for Rs 640, a shopkeeper earns a profit of 28%. How much did it cost the shopkeeper ?
6. A fruit seller purchases oranges at the rate of 3 for Rs.5 and sells them at 2 for Rs.4. Find his profit percent.
7. Pradeepbought 2 horses at Rs40, 000 each. He sold one horse at 15% gain. But he had to sell the second horse at a loss. If he had suffered a loss of Rs3600 on the whole transaction ,find the selling price of the second horse.
8. Nick purchased two hand bags for Rs 750 each. He sold these bags, gaining 6% on one and losing 4% on the other. Find his gain or loss per cent in the whole transaction.
9. Sam buys 40 kg of wheat at Rs 6.25 per kg and 30 kg of wheat at Rs 7 per kg. At what rate per kg should he sell the mixture to gain 5% on the whole?
10. Labbo allows a discount of 10% on his goods and still makes a profit of 20%. Find the cost price of an item whose marked price is Rs1700.
11. A tricycle is sold at gain of 16%. Had it been sold for Rs100 more , the gain would have been 20%. Find the cost price of the tricycle.
12. Find the marked price of a washing machine which is sold at Rs8400 after allowing a discount of 16%.
13. The difference between two selling prices of a shirt at profit of 4% and 5% is Rs.6 . Find (a) C.P. of the shirt (b) the two selling prices of the shirt.
14. A man sold two cows for Rs2970 each. On one he gains 10% while on the other he loses 10%. How much percent does he gain or lose on whole transaction?
15. A cycle merchant allows 25% discount on the marked price of the cycles and still makes a profit of 20%. If he gain Rs360 over the sale of one cycle, find the marked price of the cycle.
16. The marked price of a computer is Rs22,000. After allowing a 10% discount , a dealer still makes a profit of 20%. Find the cost price of the computer.
17. How much percent above the cost price should a shopkeeper mark his goods so that after allowing a discount of 20% on the marked price , he gains 12% ?
18. Bharati bought 2 fans for Rs1200 each. She sold one at a loss of 5% and the other at a profit of 10%' Find the total profit or loss.
19. A grocer purchased 200 kg of rice at Rs 25 per kg. He sold 80 kg of it at a gain of 10% and 40 kg at a loss of 4%. At what rate per kg should he sell the remainder to gain 8% on his total investment?
20. Hilary bought two pairs of jeans for Rs 725 each. She sold one of them at a gain of 8% and the other at a loss of 4%. Find her gain or loss per cent in the whole transaction.

CH-7. ALGEBRAIC IDENTITIES

1 Mark Questions

1. Find the value of: $x^2 - 1/5$ at $x = -1$.
2. What is the value of $x^2 + y^2 - 10$ at $x = 0$ and $y = 0$?
3. Find the product of $9a$, $4ab$ and $-2a$.
4. Simplify $(a + b + c)(a + b - c)$.
5. Using identities evaluate: 8.56×11.6
6. Find the following product $(x + 2)(x + 9)$.
7. If $(x + 2)(x + a) = x^2 + 5x + 6$, then a is equal to _____.
8. If $x^2 + y^2 = 57$, $xy = 16$ and x is greater than y , then $(x - y)$ is _____.

2 Marks Questions

9. If $(a + \frac{1}{a}) = \frac{17}{4}$, find the value of $(a - \frac{1}{a})$.
- 10 Using identities evaluate: $(99)^2$.
- 11 Simplify $x(2x - 1) + 5$ and find its value at $x = -2$.
- 12 Evaluate the value of $(95)^2$ using identities.
- 13 Verify the identity $(x + a)(x + b) = x^2 + (a + b)x + ab$ for $a = 2$, $b = 3$ and $x = 4$.
- 14 Evaluate : 102×106 .
- 15 Expand $(-3x + 4y - 5)^2$
- 16 Using a suitable identity , evaluate : $(10.5)^2$
- 17 Find the product : $(a + \frac{1}{5})(a + \frac{2}{5})$
- 18 Find volume of cuboid whose dimensions are $(x^2 - 2)$; $(2x + 4)$ and $(x - 3)$.
- 19 Simplify the expression $x(2x-1) + 5$ and its value at $x = -2$.
- 20 Using suitable identities find $(xy + 3p)^2$.
- 21 Simplify : $(x + y + z)^2 + (x + y - z)^2$
- 22 Factorise the following expression : $m^2 - 2m - 15$
- 23 factorize : $x^2 - 1 - 2y - y^2$
- 24 Find 194×206 using suitable identity.

3 Marks Questions

- 1 If $(a + \frac{1}{a}) = \frac{17}{4}$, find the value of $(a - \frac{1}{a})$.
- 2 Using a suitable identity , evaluate : $(999)^2$
- 3 Factorise : $49x^2 + 81y^2 + 144z^2 + 126xy + 216yz + 168xz$
- 4 Find $(2x + 3y)^2$ using algebraic identities.
- 5 Using the identity $(a-b)^2 = a^2 - 2ab + b^2$, find $(5a - 7b)^2$.
- 6 Find 194×206 using suitable identity.
- 7 If $x + \frac{1}{x} = 11$, find the value of $x^2 + \frac{1}{x^2}$
- 8 If $5x - 2y = 7$ and $xy = 2$, find the value of $(5x + 2y)^2$

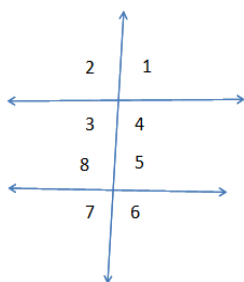
4 Marks Questions

1. If $x^2 + \frac{1}{x^2} = 27$, find $(x - \frac{1}{x})$.
2. Find the following products $(a - 3b)(a + 3b)(a^2 + 9b^2)$
3. Simplify using identity: $\frac{2.3 \times 2.3 - 0.3 \times 0.3}{2.3 \times 2.3 - 2 \times 2.3 \times 0.3 + 0.3 \times 0.3}$
4. If $a + b + c = 12$ and $a^2 + b^2 + c^2 = 66$, find the value of $ab + bc + ca$.
5. The sum of $(x + 3)$ observations is $(x^4 - 81)$. Find the mean of the observations.
6. The area of the circle is given by the expression: $(\pi x^2 + 10\pi x + 25\pi)$. Find the radius of the circle.

CH-10. PARALLEL LINES

(1 marks)

1. Two lines in the same plane which are perpendicular to a given line in the plane are _____ to each other.
2. A line drawn through the midpoint of a side of a triangle parallel to other side _____ the third side.
3. In the given figure, $p \parallel q$ and t is a transversal then $\angle 1 =$ _____

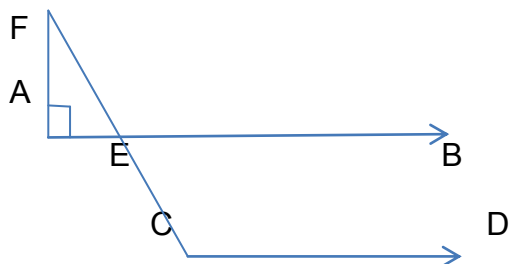


- 1) $\angle 1$ and $\angle 5$ are called _____ angles
- 2) $\angle 3$ and $\angle 5$ are called _____ angles.
- 3) Two pairs of corresponding angles are _____ .
- 4) Two pairs of alternate interior angles are _____ .
- 5) Two pairs of alternate exterior angles _____ .

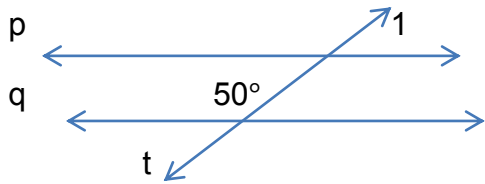
4. Two lines in the same plane which are perpendicular to a given line in the plane are _____ to each other.
5. A line drawn through the midpoint of a side of a triangle parallel to other side _____ the third side.

(2 marks)

- 1) In the given figure, $AB \parallel CD$ and $\angle F = 30^\circ$. Find $\angle ECD$.



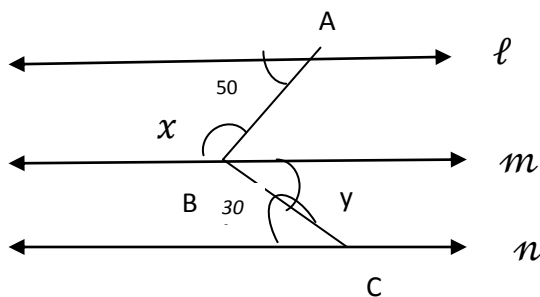
2) In the given figure , $p \parallel q$ and t is a transversal then $\angle 1 = \underline{\hspace{2cm}}$



3) If $AB = x + 3$, $BC = 2x$ and $AC = 4x - 5$, then for what value of x , B lies on AC.

(3 marks)

1. Draw a line segment AB of length 7.5 cm and divide it into three equal parts. Measure the length of each part.
2. Draw a line segment AB of length 8.5 cm and divide it into five equal parts. Measure the length of each part.
3. ABCD is a quadrilateral in which all the four angles , $A = \angle B = \angle C = \angle D = 90^\circ$. Show that $AB \parallel CD$ and $AD \parallel BC$.
4. Given that $l \parallel m$ and a line p in the plane intersect l . Does p intersect m ?
5. Prove that if arms of an angle are respectively parallel to the arms of another angle , then the angles are either equal or supplementary .
6. Draw a line segment AB of length 7 cm and find a point P on it such that $AP = PB$. Measure AP and PB .
7. Draw a line segment $AB = 6\text{cm}$. Mark two points P and Q on it. Draw lines perpendicular to AB through P and Q (PQ and RS). What can you say about PR and QS ? Are these parallel ? Justify your answer.
8. In the following figure, $l \parallel m \parallel n$. Find $\angle x$ and $\angle y$.

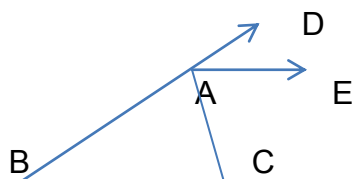


(4 marks)

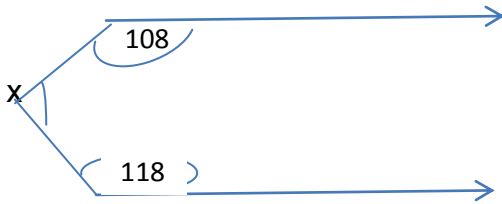
Q1) Draw a line segment $AB = 5.5\text{ cm}$. Find a point P on it such that $AP = \frac{2}{3}PB$.

Q2) Prove that if two lines intersect each other , then vertically opposite angles are equal .

Q3) In given figure , AE bisects $\angle CAD$ and $\angle B = \angle C$ prove that $AE \parallel BC$.



Q4) In the given figure $AB \parallel CD$. Find the value of x .



CH- 13, INTRODUCTION TO GRAPHS

(1 marks)

1. Draw the points (5, 4) and (4, 5). Do they represent the same point?
2. Point (0,3) lies on _____ axis.
3. A pictorial representation of data, using symbols to represent a group of items is known as ____ .
4. The coordinates of origin is _____ .
5. A point whose y-coordinate is zero , will lie on the ___ axis .
6. A point whose X-coordinate is zero , will lie on the ___ axis .
7. Plot the points A(0,2), B(5,2), C(2,1) and D(1,6) on the graph paper.
8. Write the answer to each of the following question
 - (a) What is the name of the horizontal and vertical lines drawn to determine the position of any point in the Cartesian plane ?
 - (b) Write the name of the point where the above two lines intersect.
9. What is histogram ?
10. What is pictograph ?
11. What is bar graph ?

(2 marks)

1. Draw a line passing through (2, 1) and (1, 2). Find the coordinates of the points at which this line meets the x-axis and y-axis.
2. Draw the graph for the following table of values of time (in hours) and distances (in km) covered by a car. (2)

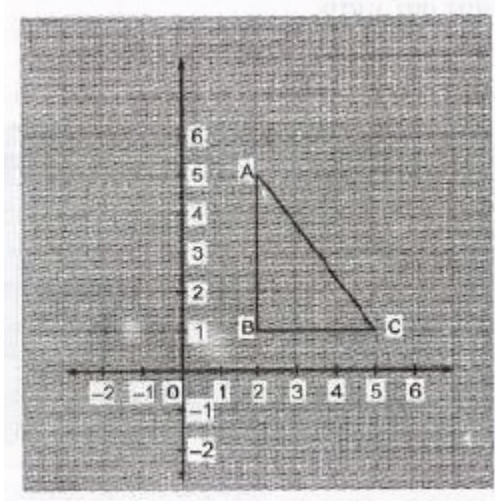
Time (in hours)	7:00	8:00	9:00	10:00
Distance (in km)	60	120	180	240

From the graph, find:

The distance covered by the car during the period 7:00 to 8:00.

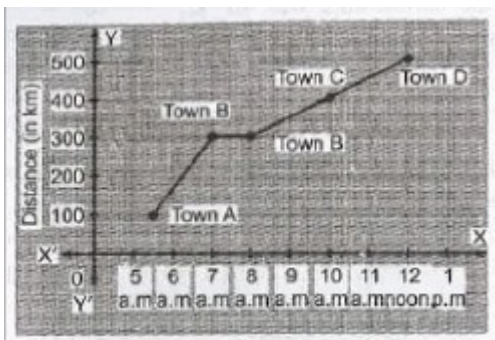
At what time the car would have covered 180 km?

3. Find the coordinates of the vertices of ABC given in graph. Draw a triangle by taking vertices as A(5, 2), B(1, 2) and C(1, 5).



(3 marks)

1. Following graph describes the movement of a car from a town A to town D. Study the graph and answer the following questions: (2)



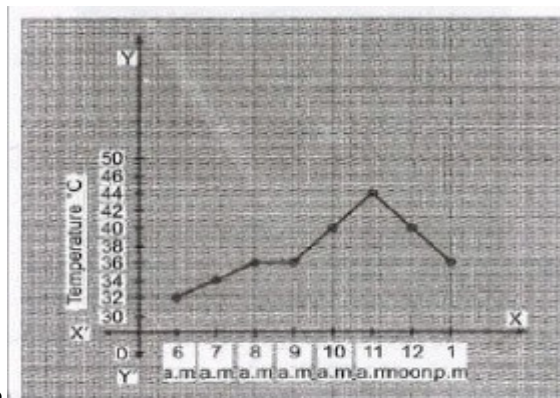
What is the distance between town A and town D?

What did the car start from town A?

Where did the car stop and for what duration?

How long did it take to go from town C to town D?

2. Read the following 'time-temperature' graph of a place and answer the questions given below. (2)



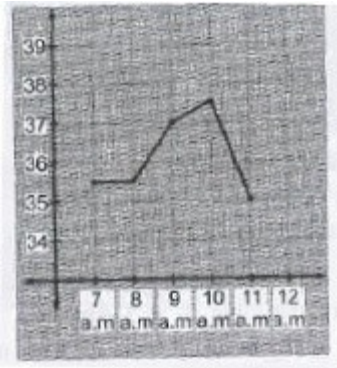
What was the temperature at 7 a.m.?

When the temperature was maximum?

When was the temperature 40°C ?

During which period, the temperature remained constant?

3. The graph shows the temperature of a patient recorded before noon. Read it and answer the following questions.



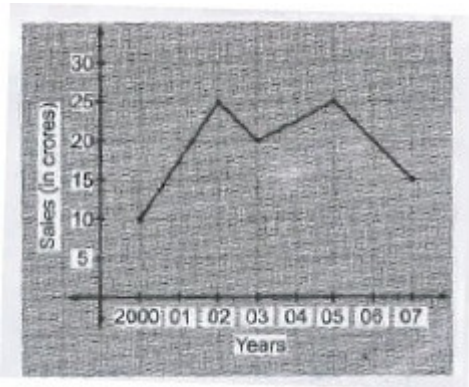
What was patients temperature at 9 a.m.?

What the highest temperature of the patient?

When was the patient's temperature lowest?

During which period, the patient's temperature remained constant?

4. The graph shows the yearly sales figure of a shoe manufacturing company. (3)



What were the sales in 2000?

In which year the sales were maximum?

What is the difference between the sales in the year 2003 and 2005?

5. Draw a linear graph for the following data: (3)

Month	May	June	July	August
Rainfall. (in cm)	5	7	4	6

6. Plot the points on a graph: A(4, 9); B(6, 0); C(7, 7); D(2, 4) (4)

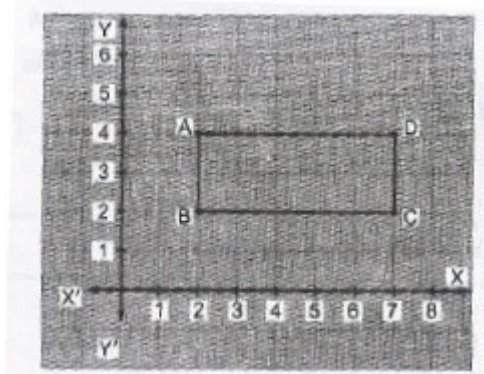
7. Plot the points A(4, 3). B(4, 0),C (4, 2),D (4, 6) and join them. Do they lie on the same line?

8. Draw a line passing through (4, 5) and (5, 4). Find the coordinates of the points is a straight line. *****

9. Show that the linear graph obtained by joining the following points is a straight line.

(6, -3), (6, 1), (6, 4) and (6, 6)

10. Look at the graph of a rectangle in the figure. What are the coordinates of its vertices?



15. Draw a graph of ΔPQR , the coordinates of whose vertices are P(9, 5), Q(7, 7) and C(9, 9).

(4 marks)

1. Draw a 'deposit-intereset' graph for the following data: (4)

Deposit (in Rs)	5000	6000	7000	8000	9000
Simple interest (in Rs) for 1 Year	400	480	560	640	720

From the graph, find the interest on Rs 7500 for 1 year.

2. Draw a graph from the given information.

day	1	2	3	4	5	6	7
No of pairs	20	24	18	16	17	22	12

3. Draw a graph from the given table.

Time(in hrs)	1	2	3	4
Distance (in km)	40	80	120	160

4. Write the coordinates of the origin. 1)

5. What are coordinates of a point which lies on the x-axis? 1)

6) Plot the points A(0,2), B(5,2), C(2,1) and D(1,6) on the graph paper.

7) Plot the points A(2,3), B(5,3), C(5,5) and D(2,5) on graph. Connect the points in that order so as to get a closed figure ABCD. What type of figure do you get?

8) Plot the points (2,2), (4,4), (6,6). Join these points in pairs. Do they lie on the line passing origin ?

Q9) Plot the following ordered pairs on the graph

X	0	2	5	3	6	7
Y	2	2	2	2	2	2

10) Following table gives the temperature at 12 :00 noon on seven successive days in Delhi.

Day(October)	1	2	3	4	5	6	7
Temp.(in °C)	14	18	16	13	19	20	17

Q11) Locate the points (2,3), (0,1),(4,5). Do they lie on a line ?

Q12) Locate the point (1,0), (2,1), (3,2), (4,3).Do they lie on a line ?

Q13) The following table shows the amount of rice grown by a farmer in different years.

Year	2000	2001	2002	2003	2004	2004	2005
Rice grown in quintal	200	180	240	260	250	200	270

Plot a graph to illustrate this information.

Q14) The following table gives the marks scored by the students of class VIII.

No of students	8	10	10	8	4	4	2
Marks obtained	10	12	14	15	16	18	20

Represent this information on graph paper.

Q15) A bus is going on a long journey starting at 4:00 hour.The speed of the bus in different hours is given below. :

Time in hours	4:00	6:00	8:00	10:00	12:00	14:00
Speed in km/hr	30	50	60	45	80	70

Draw speed – time graph for the above data.

CH-14, MENSURATION

(1 marks)

- The area of trapezium is $24m^2$. If its height is 6m then find sum of parallel sides.
- The area of trapezium is $110m^2$ and its height is 11m. if one of the parallel sides is 7m then find other parallel side.
- Sum of parallel sides of trapezium is 26 m and its area is $156m^2$, and then find distance between parallel sides of trapezium.
- The height of a cylinder is 14 cm and its curved surface area.
- The height of a cylinder is 14 cm and its surface area is 704 sq.cm, and then finds its volume.
- Can a polygon have 4 triangles as its faces?
- How are pyramids and cones alike ?
- Can a polyhedron have 10 faces, 20 edges and 15 vertices?
- Verify the Euler's formula for i)cuboid ii)tetrahedron.
- Draw the net of a i) square prism ii) triangular pyramid
- Find the increase in the surface of the cube if each edge of the cube is increased by 40%?
- Find the surface area of a sphere of radius 5.6cm.
- In a solid if $F=V=5$,find the number of edges.

(2 marks)

1. Volume of a cube is 1000 cm^3 . Find its total surface area.
2. How many vertices and edge do the polyhedron have
(a) Square pyramid (b) triangular prism
3. Find the volume of a cube, whose surface area is 600 cm^2 .
4. Find the area of a square, the length of whose diagonal is $3\sqrt{2} \text{ m}$.
5. The length, breadth and height of a cuboid are 20 cm, 15 cm, 10 cm respectively. Find its total surface area.
6. If the parallel sides of a parallelogram are 2 cm apart and their sum is 10 cm then find its area.
7. Find the area of a square the length of whose diagonal is 2.9 metres.
8. The area of a square field is 0.5 hectares. Find the length of its diagonal in metres.
9. The diameter of a semi-circular field is 14 metres. What is the cost of fencing the plot at Rs. 10 per meter.

(3 marks)

1. Find the cost of carpeting a room 15 m long and 9 m broad with carpet 75 cm broad at the rate of Rs. 7.40 per metre.
2. The sides of a triangle are in ratio 13:14:15 and its perimeter is 84 cm. Find the area of triangle.
3. The sides of a rectangular park are in ratio 4:3. If its area is 1728 m^2 , find the cost of painting it at Rs. 2.50 per metre.
4. The area of a square plot is 1024 m^2 . Find the length of wire which can go around the boundary of the plot.
5. In a cylindrical pipe, the area of its base and CSA are 154 m^2 and 880 m^2 respectively. Find the radius and height of the cylinder.
6. The length and breadth of a rectangular field are in the ratio 3:2. If the area of field is 34565 m^2 , find the cost of fencing the field at Rs. 3.50 per meter.
7. In a building there are 24 cylindrical pillars with each having a radius 28 cm and height 4 m. Find the cost of painting the curved surface area of all pillars at the rate of Rs. 8 per m^2 .
8. A box is in the form of cuboid of dimensions $(80 \times 30 \times 40) \text{ cm}^3$. The base the side faces and back faces are to be covered with a coloured paper. Find the area of paper needed.
9. The lateral surface area of a hollow cylinder is 4224 cm^2 . It is cut along its height and formed a rectangular sheet of width 33 cm. Find the perimeter of rectangular sheet.
10. A roller takes 750 complete revolutions to move once over a level of road. Find the area of road if the diameter of the roller is 84 cm and length is 1 m.
11. If base area of a room 12 m^2 and height is 3 m then its volume is:
12. The area of the floor of a rectangular hall of length 40m is 960 m^2 . Carpets of size 6m x 4m are available. How many carpets are required to cover the hall?
13. Find the area of the quadrilateral ABCD as shown. The diagonal AC is 84 units and perpendiculars BE and FD are 21 and 28 units respectively.
14. The floor of a rectangular hall has a perimeter 250m. If the cost of painting the four walls at the rate of Rs. $10/\text{m}^2$ is Rs. 15000, find the height of the hall.
15. The curved surface area of a right circular cylinder of height 14cm is 88 cm^2 . Find the diameter of the base of the cylinder.
16. In a hot water heating system, there is a cylindrical piping of length 28 cm and diameter 5cm. Find the total radiating surface in the system.

17. Diameter of the base of a cone is 10.5cm and its slant height is 10cm. Find its curved surface and its total curved surface area.
18. Find the total surface area of a hemisphere of radius 10cm.
19. A rectangular sheet of paper 44cmx18cm is rolled along its length and a cylinder is formed. Find the volume of the cylinder.
20. The area of a trapezium is 440cm^2 . The lengths of the parallel sides are respectively 30cm and 14 cm. Find the distance between them.
21. The circumference of a circle exceeds the diameter by 30cm. Find the radius of the circle.
22. The diameter of a wheel of a car is 98cm. How many revolutions will it make to travel 6160 metres.
23. Find the side of a cube whose surface area is 600cm^2 .
24. The area of a rectangular field is 48m^2 and one of its side is 6m. How long will a lady take to cross the field diagonally at the rate of 20m/minute ?
25. Four horses are tethered with equal ropes at 4 corners of a square field of side 70m so that they just can reach one another. Find the area left ungrazed by the horses.
26. A boy is cycling such that the wheels of the cycle are making 140 revolutions per hour. If the diameter of the wheel is 60 cm, calculate the speed in km/hr with which the boy is cycling.
27. Find the length of the largest pole that can be placed in a room of dimension $12\text{m} \times 4\text{m} \times 3\text{m}$.
28. A cube of side 5cm is cut into as many 1cm cubes as possible. What is the ratio of the surface area of the original cube to that of the sum of the surface areas of the smaller cubes ?
29. A swimming pool is 200m by 50m and has an average depth of 2m. By the end of a summer day, the water level drops by 2cm. How many cubic metres of water is lost ?

(4 marks)

1. The diagonal of a quadrilateral is 30 m in length and the perpendicular to it from the opposite vertices are 6.8m and 9.6m. Find area of quadrilateral.
2. Find the area of a rhombus having each side equal to 15 cm and one of whose diagonal is 24 cm
3. The base of parallelogram is twice of its height. If the area is 512 cm^2 , find the base and height.
4. The parallel sides DC and AB of a trapezium are 12 cm and 36 cm respectively. Its non-parallel sides are each equal to 15cm. Find area of trapezium.
5. The parallel sides of a trapezium are 25 cm and 13 cm. its non-parallel sides are equal, each being 10 cm. find area of trapezium.
6. A flooring tile has a shape of a parallelogram whose base is 28cm and the corresponding height is 20cm. How many such tiles are required to cover a floor of a area 2800cm^2
7. The rainfall recorded on a certain day was 5cm. Find the volume of water that fall on 2 hectare field.

8. Rain water which falls on a flat rectangular surface of length 6 m and breadth 4 m is transferred into a cylindrical vessel of internal radius 20 cm. What will be the height of water in the cylindrical vessel if the rain fall is 1 cm (Take $\pi = 3.14$)
9. The areas of three adjacent faces of a cuboid are 180 cm sq., 96 cm sq. and 120cm sq. what is the volume of cuboid ?
10. If each edge of a cube is doubled,(i) how many times will its surface area increases?
(ii) how many times will its volume increases?
11. If a solid cylinder has a total surface area 462 sq. cm. and CSA is 1/3rd of it so what is the volume of the cylinder?
12. Water is pouring into a cuboidal reservoir at the rate of 60 litres per minute. If the volume of reservoir is $108m^3$, find the number of hours it will take to fill the reservoir.
13. A suitcase with measures 80cm x 48cm x 24 cm is to be covered with a tarpaulin cloth. How many metres of tarpaulin of width 96cm is required to cover 100 such suitcases?
14. The lateral surface area of a hollow cylinder is $4224cm^2$. It is cut along its height and formed a rectangular sheet of width 33cm. Find the perimeter of rectangular sheet?
15. An ant is moving around a few food pieces of different shapes{a semicircle of radius 2.8cm or a cone having slant height 2cm and radius 2.8cm} scattered on the floor. For which food-piece would the ant have to take a longer round?
