MATHS

BOOKS - MTG IIT JEE FOUNDATION

PREP TEST

Section A

1. There are 'b' boys and 'g' girls in a class. The ratio of the number of boys to the total number of students in the class is:

A. $\frac{b}{b+g}$

B. $\frac{g}{b+g}$

C. $\frac{b}{g}$

D. $\frac{b+g}{b}$

Answer: A

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2. What fraction of an hour is 40 minutes ?

A. $\frac{1}{2}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$

D. $\frac{1}{4}$

Answer: C

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3. If the perimeter of a regular hexagon is x metres, then the length of each of its sides is

A. (x + 6) metres

B. (x + 6) metres

C. (x ÷ 6) metres

D. (6 ÷ x) metres

Answer: B

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4. Which of the following operations satisfies the associative law for whole numbers?

A. Subtraction and division

B. Subtraction and multiplication

C. Division and multiplication

D. Addition and multiplication

Answer: D

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5. Find the ratio of one third of 33 to one eighth of 192.

A. $64:11$

B. $24:11$

C. $11:64$

D. $11:24$

Answer: D

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6. In a tally marks, a group of eight marks represented as

A. 

B. 

C. 

D. None of these

Answer: A

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7. Which of these can divide a line segment into two equal halves ?

A. Perpendicular

B. Angle bisector

C. Perpendicular bisector

D. All of these

Answer: C

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8. The additive inverse of a negatie interger

A. is always negative

B. is always positive

C. is the same integer

D. zero

Answer: B

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9. Three or more line are ___ if they pass through a common point.

A. Parallel

B. Collinear

C. Concurrent

D. None of these

Answer: C

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10. Expanded form of 136.085 is

A. $100 + 30 + 6 + \frac{8}{10} + \frac{5}{100} + \frac{5}{1000}$

B. $136 + \frac{8}{100} + \frac{5}{1000}$

C. $100 + 30 + 6 + \frac{8}{100} + \frac{5}{1000}$

D. $130 + 6 + \frac{10}{8} + \frac{1000}{5}$

Answer: C

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11. Which of the following quadrilateral is not a parallelogram ?

A. Rectangle

B. Square

C. Rhombus

D. None of these

Answer: D

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12. I think of a number and on adding 13 to , I get 27, The equation for this is

A. $x - 27 = 13$

B. $x - 13 = 27$

C. $x + 27 = 13$

D. $x + 13 = 27$

Answer: D

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13. A figure has line symmetry, if a line can be drawn dividing the figure into two identical parts, i.e., on folding the figure along the line, the two

parts of the figure exactly coincide.

Which of the following letters has only one line of symmetry?

A. H

B. X

C. Z

D. T

Answer: D

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14. A figure has line symmetry, if a line can be drawn dividing the figure into two identical parts, i.e., on folding the figure along the line, the two parts of the figure exactly coincide.

A triangle that has zero line of symmetry is

A. Equilateral triangle

B. Isosceles triangle

C. Scalene triangle

D. Right angled isosceles triangle

Answer: C

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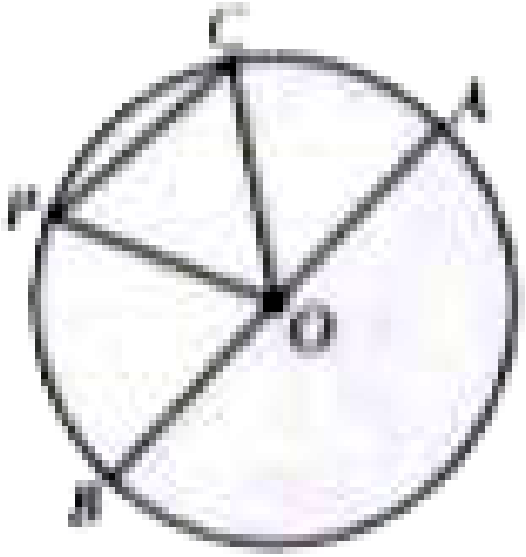
15. In given figure, O is the centre of the circle.



Which of the following is not the radius of the given circle?

A. AB

B. OP

C. OC

D. OB

Answer: A

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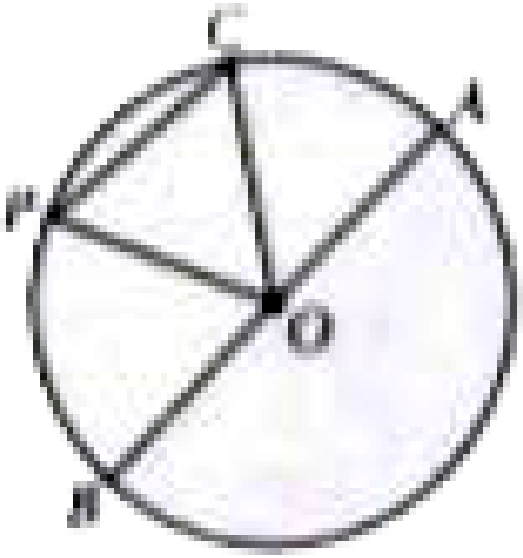
16. In given figure, O is the centre of the circle.



A chord, which is not the diameter of the circle is

A. AB

B. PC

C. OP

D. OA

Answer: B

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17. Assertion : The H.C.F. of two numbers is 28 and their L.C.M. is 336. If one number is 112, then the other number is 84.

Reason: The product of two numbers is equal to the H.C.F. and L.C.M of the numbers.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

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18. Assertion : The following number line represents [(-3) + 8].

Reason: To represent addition of a positive integer to any integer on the number line, we move to the right on the number line.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: D

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19. Assertion : The difference between the smallest 3-digit number and the greatest 2-digit number is 1.

Reason: While writing Roman numerals, repetition of symbol means addition of its value as many times as it occurs.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: B

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20. Assertion : If you are facing North and turn anti-clockwise to face west, you make $\frac{3}{4}$ of a revolution.

Reason: Turning by two straight angles in same direction makes a full turn i.e., one revolution.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: D

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21. If a and b are two negative integers, then the sign of a + b is

A. negative

B. positive

C. either positive or negative

D. none of these

Answer: A

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22. Which of the following statements is not true?

A. Every whole number has a successor.

B. Every whole number has a predecessor.

C. O is the least whole number.

D. Every natural number is a whole number.

Answer: B

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23. The ratio of the number of sides of a square to the number of sides of a triangle is

A. $1:2$

B. $3:2$

C. $4:1$

D. $4:3$

Answer: D

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24. Thirty one crore fifty five lakh thirty two thousand eight hundred in numerals is written as

A. 315532800

B. 3015532800

C. 3150532800

D. 3155302800

Answer: A

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25. If a perpendicular is drawn to a line segment MN at N and point P is marked on perpendicular, then

A. $\overline{MP} \perp \overline{NP}$

B. $\overline{MN} \mid\mid \overline{NP}$

C. $\overline{MN} \mid\mid \overline{MP}$

D. $\overline{MN} \perp \overline{NP}$

Answer: D

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26. What should be subtracted from 498.30 to get 281.039?

A. 217.2

B. 217.26

C. 217.261

D. 217.621

Answer: C

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27. 10 - x means

A. 10 is subtracted x times

B. x is subtracted 10 times

C. x is subtracted from 10

D. 10 is subtracted from x

Answer: C

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28. The largest number which always divides the sum of any pair of consecutive odd numbers is

A. 2

B. 4

C. 6

D. 8

Answer: B

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29. A line segment passing through the centre of a circle and whose end points lie on the circle is called

A. diameter

B. radius

C. sector

D. none of these

Answer: A

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30. The greatest integer lying between -10 and -15 is

A. -10

B. -11

C. -15

D. -14

Answer: B

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31. A parallelogram having equal sides is called

A. rhombus

B. rectangle

C. square

D. None of these

Answer: A

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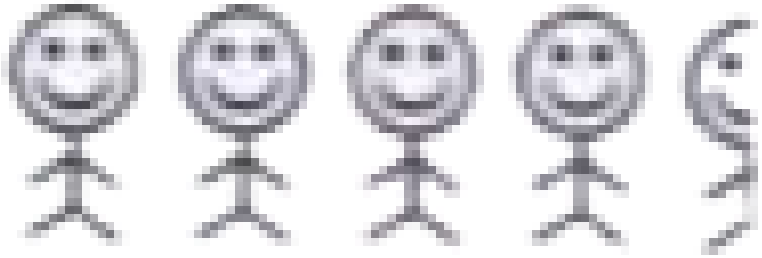
32. If represents 2 persons, then



represents

_____ persons.

A. 9

B. 10

C. 12

D. none of these

Answer: A

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33. $\frac{5}{6}$ as a fraction with numerator 60, is equivalent to

A. $\frac{60}{48}$

B. $\frac{60}{70}$

C. $\frac{60}{72}$

D. none of these

Answer: C

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34. The value of $(70) + (-49) + (-58) + (-32)$ is

A. 69

B. 70

C. -69

D. -70

Answer: C

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35. Jasmine is 10 years old and Rose is 12 years old. What will be their total ages after n years ?

A. $(2n)$ years

B. $(2n + 10)$ years

C. $(2n + 12)$ years

D. $(2n + 22)$ years

Answer: D

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36. Assertion : If 653+47 is divisible by 11, then least value should be given to + is $*1$.

Reason: If the difference between the sum of the digits at odd places (from the right) and the sum of the digits at even places (from the right) is either 0 or divisible by 11, then the number is divisible by 11.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: A

37. Assertion: If Ajay spent $2\frac{1}{6}$ hours in reading a storybook and spent $\frac{1}{3}$ of an hour in playing computer game, then the total time spent by Ajay is 2 hours.

Reason: Mixed fractions can be written either as a whole part plus a proper fraction or entirely as an improper fraction.

A. If both assertion and reason are true and reason is the correct explanation of assertion.

B. If both assertion and reason are true but reason is not the correct explanation of assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer: D

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38. Which of the following letters does not have any line of symmetry?

A. M

B. S

C. K

D. H

Answer: B

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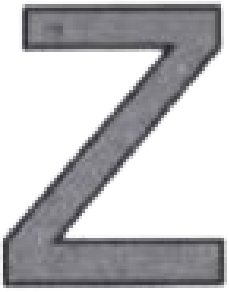
39. Which of the following have two lines of symmetry

A.

B. 

C. 

D. None of these

Answer: B

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40. Which of the following has more than two lines of symmetry

A. Equilateral triangle

B. Parallelogram

C. Rectangle

D. None of these

Answer: A

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Section B

1. The side of a square field is 108 m. Find the cost of levelling it at the rate of Rs 3.5 per square metre.

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2. Fill in the blanks in the following table which represents shirt size of 40 students of a school.

Shirt size	Tally Marks	Number of students
30	III	3
32	𝍸	—
34	—	8
36	𝍸 II	—
38	𝍸 —	10
40	—	7

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3. Estimate the numbers to the nearest thousands and find the difference (45963 - 28577).

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4. Make the greatest and the smallest 5-digit numbers using different digits in which 5 appears at ten's place.

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5. Simplify: (-53) + 49 + (-27)+ (-86) + 19

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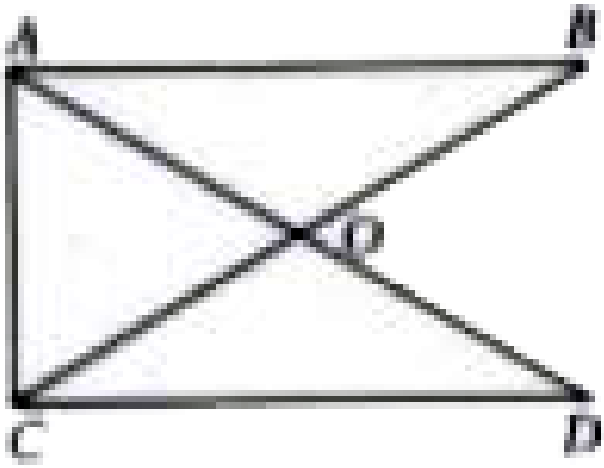
6. Number of angles less than 180° in given figure is _____ and their names are____



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7. A book costs Rs m and a pen costs Rs n more than half of the cost of book. Express the total cost of a book and a pen in terms of 'm' and 'n'?

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8. There are 8 girls and 10 boys in every section of Class VI. There are 12 such sections. How many children are there in Class VI in all? Use suitable property to support your answer.

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9. If 23 litres of water is utilised by 69 people, how many litres of water will be needed for 1890 people in similar circumstances?

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10. Find the sum of the greatest and the least six digit numbers formed by the digits 2, 0, 4, 7, 6, 5 using each digit only once.

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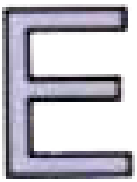
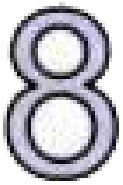
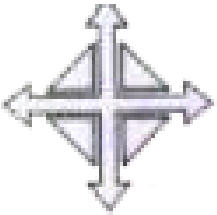
11. Draw lines of symmetry in each of the following:

(a)  (b)  (c) 

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12. Represent the fraction on the number line.

$\frac{3}{7}$

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13. Represent the fraction on the number line.

$4\frac{3}{5}$

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14. Using the number line, write the integer which is

4 more than - 5

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15. Using the number line, write the integer which is

3 less than 2

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16. What is the difference between the second and the third common multiple of 3 and 6 ?

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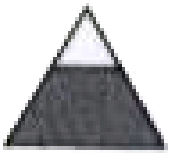
17. Identify the error, if any.



This is $\frac{1}{2}$

This is $\frac{1}{4}$

This is $\frac{3}{4}$

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18. Solve them using suitable rearrangment.

$56 + 766 + 44 + 234$

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19. Solve them using suitable rearrangment.

$525 \times 110 \times 2$

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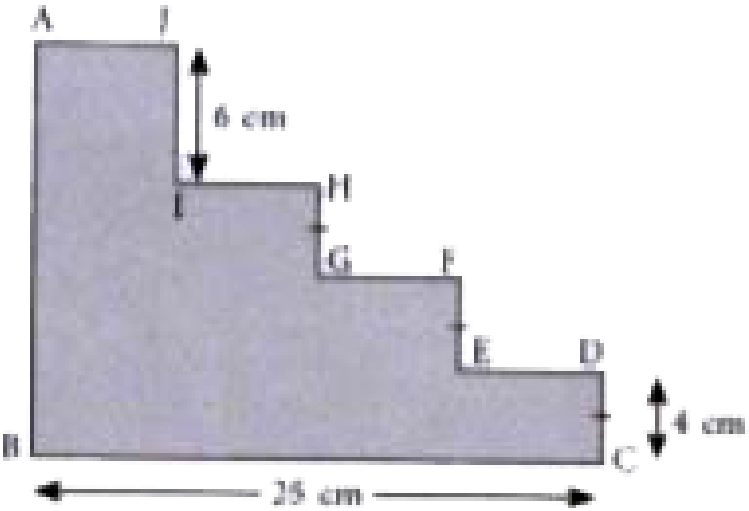
20. Find the perimeter of the following figure



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21. If m is a whole number is less than 5. complete the table and by inspection of the table find the solutions of the equation 2m-5=-1 :

m					
$2m-5$					

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22. A train takes 2 hours to travel from Ajmer to Jaipur, which are 130km apart. How much time will it take to travel from Delhi to Bhopal which are 780km apart if the train is travelling at the uniform speed?

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23. Ankit and Samantha have the same number of plants in their gardens. They both planted them in form of rectangles. Ankit has 108 plants in a row and has 50 rows of plants. Samantha has 18 plants in a row. How many rows of plants does she have?

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24. Nazima gave $2\frac{3}{4}$ litres out of the $5\frac{1}{2}$ litres of juice she purchased to her friends. How many litres of juice is left with her?

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25. Length and breadth of the floor of a room are 5m and 3m, respectively. Forty tiles. Each with area $\frac{1}{16}m^2$ are used to cover the floor partially. Find the ratio of the tiled and the non tiled portion of the floor.

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26. The length of a rectangular field is 8m and breadth is 2m. If a square field has the same perimeter as this rectangular field, find which field has the greater area.

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27. Six bells commerce tolling together and toll at intervals of 2, 4, 6, 8, 10, 12 minutes respectively. In 30 hours, how many times do they toll together?

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28. The given table shows the number of tourists who visited Taj Mahal during different months. Month

Month	March	April	May	June	July
Number of tourists (in lakh)	3.5	2	2.5	4	4.5

Draw a bar graph to represent the above information by using appropriate scale.

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29. Alok purchased 1kg 200g potatoes, 250g dhania, 5kg 300g onion, 500g palak and 2kg 600g tomatoes. Find the total weight of his purchases in kilograms.

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30. Simplify the following:

$6.123 - 4.954 + 1.25$

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31. Simplify the expression:

$0.981 - 0.254 + 7.43$

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32. Draw$\angle PQR$ of measure 70° and bisect it.

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33. Draw a line segment of length 10cm. Divide it into four equal parts. Measure each of these parts.

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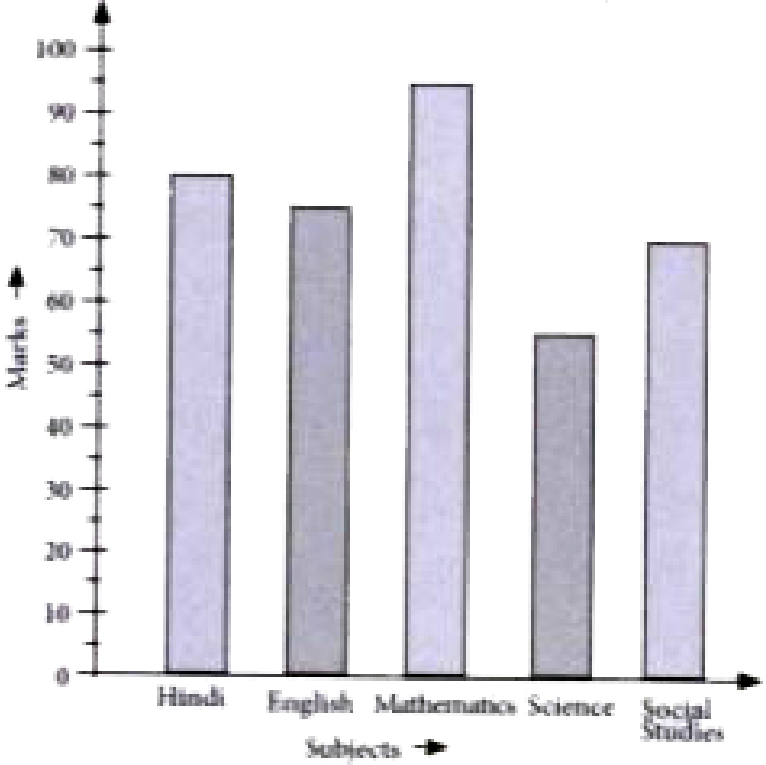
34. The bar graph shows the marks obtained by Kashish in half-yearly examination in various subjects.



Draw a pictograph for the above data and then answer the following questions.

Name the subjects in which Kashish scored minimum and maximum marks.

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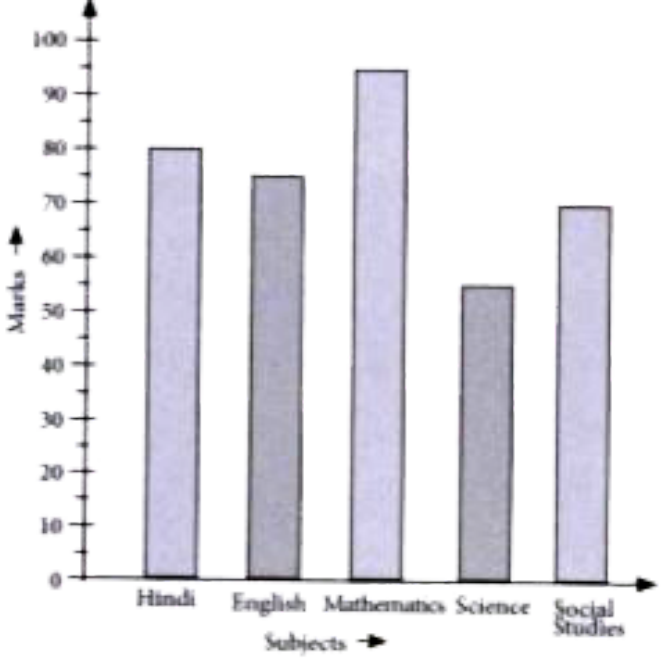
35. The bar graph shows the marks obtained by Kashish in half-yearly examination in various subjects.



Draw a pictograph for the above data and then answer the following questions.

Find the total marks scored by Kashish.

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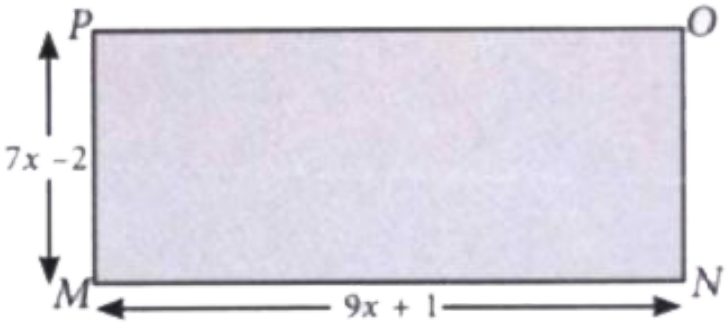
36. Find he perimeter of the rectangle MNOP.



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37. Find the number of tiles of measure 12 cm $\times$ 5 cm needed to fit in a rectangular floor whose length and breadth respectively are 200 cm and 72 cm.

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38. If the area of a square is $144cm^2$ and its perimeter is the same as the perimeter of an equilateral triangle, then what is the length of each side of the triangle?

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39. If 25, z, z, 49 are in proportion, then find the value of z.

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40.

$Iftheh \text{ and } ofaclock \star tsat4 \text{ and } makes\left(\frac{1}{4}\right)^{th} revolutionclockwise, ther$

View Text Solution

41. Radius of the Earth is 6400 km and that of Mars is 4300000 m. Whose radius is bigger and by how much?

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42. Estimate the numbers to the nearest hundreds and find the product of 243 and 467.

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43. Sunita is half the age of her mother Geeta. Find their ages after 4 years.

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44. Sunita is half the age of her mother Geeta. Find their ages before 3 years.

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45. Find the H.C.F. of 140, 210 and 350 by prime factorisation method.

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46. In given figure how many line segments are there? Name them.

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47. The total rainfall during the three monsoon months was 5.14 cm. The rainfall recorded for the first two months was 2.134 cm and 1.567 cm. What was the amount of rainfall for the third month?

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48. If we are at 8 on the number line, in which direction should we move to reach the integer

-1

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49. If we are at 8 on the number line, in which direction should we move to reach the integer

11

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50. If we are at 8 on the number line, in which direction should we move to reach the integer

0

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51. Solve them using suitable rearrangement.

$243 + 621 + 357$

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52. Solve the using suitable rearrangement.

$4 \times 128 \times 5 \times 2$

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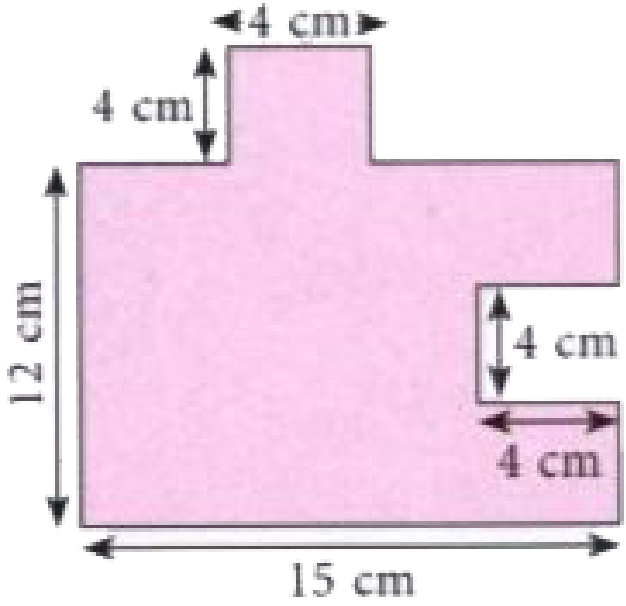
53. Find the perimeter of the following figure.



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54. Tulsi bought 10.235 gm of ammonia, 7.34 gm of copper sulphate and 9.032 gm of calcium hydroxide for her chemistry laboratory. Find out the total weight of all the compounds she bought.

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55. Cost of 4 dozens bananas is Rs 60. How many bananas can be purchased for Rs 12.50?

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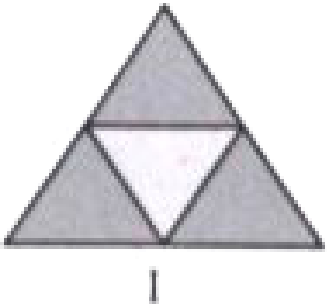
56. What is the sum of the fractions, representing the shaded parts of the given figures?



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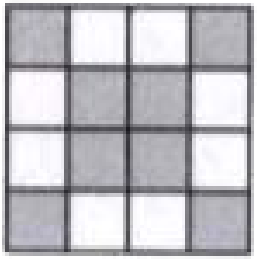

II

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57. Represent the fractions on the number line.

$2\frac{1}{2}$

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58. Represent the fractions on the number line.

$\frac{6}{7}$

Watch Video Solution

59. Represent the fractions on the number line.

$\frac{2}{3}$

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60. In an examination, the grades achieved by 30 students of a class are given below. Arrange these grades in a table using tally marks:

B, C, C, E, A, C, B, B, D, D, D, D, B, C, C, C, A, C, B, E, A, D, C, B, E, C, B, E, C, D

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61. The length and breadth of a school ground are 150 m and 90 m respectively, while the length and breadth of a mela ground are 210 m and 126 m, respectively. Are these measurements in proportion?

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62. Rekha was asked to calculate $125 \times 36,$ but by mistake she multiplied 125 by 63. What will be the difference between her answer and the correct answer. Also, write the answer in Roman numerals.

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63. A, B and C start at the same time in the same direction to run around a circular stadium. A completes a round in 252 seconds, B in 308 seconds and C in 198 seconds, all starting at the same point. After what time will they meet again at the starting point? (a) 26 minutes 18 seconds (b) 42 minutes 36 seconds (c) 45 minutes (d) 46 minutes 12 seconds

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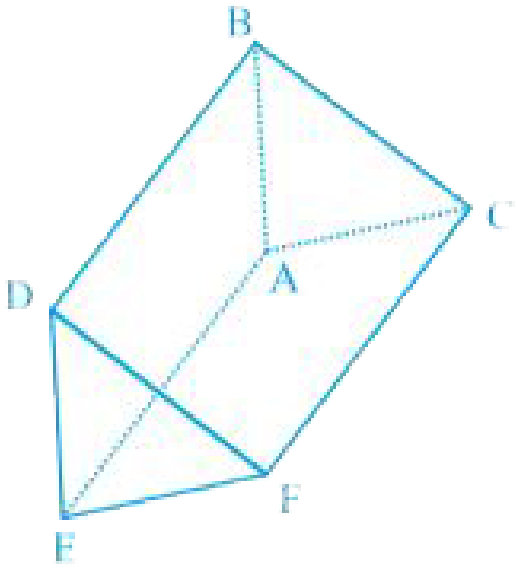
64. Write the name of

(a) vertices

(b) edges , and

(c) faces of the prism shown in Fig. 2.48



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65. The cost of 1 chart paper is Rs 5 and of 1 marker pen is Rs 18. Neeta needs to buy 6 chart papers and 6 marker pens. So, how much money does she need? Also, show the method of solving this problem using suitable property.

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66. Draw a circle of radius 5 cm. Draw any two of its chords. Construct the perpendicular bisectors of these chords. Where do they meet?

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67. Priya and Mini share 24 pieces of chocolates in the ratio $\frac{1}{3}:\frac{1}{5}$. How many pieces of the chocolate does each one get?

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68. Draw a bar graph using the data given in the following table, which shows the number of bikes manufactured in a factory during the years 2010 to 2013.

Year	Number of Bikes
2010	700
2011	600
2012	900
2013	1200

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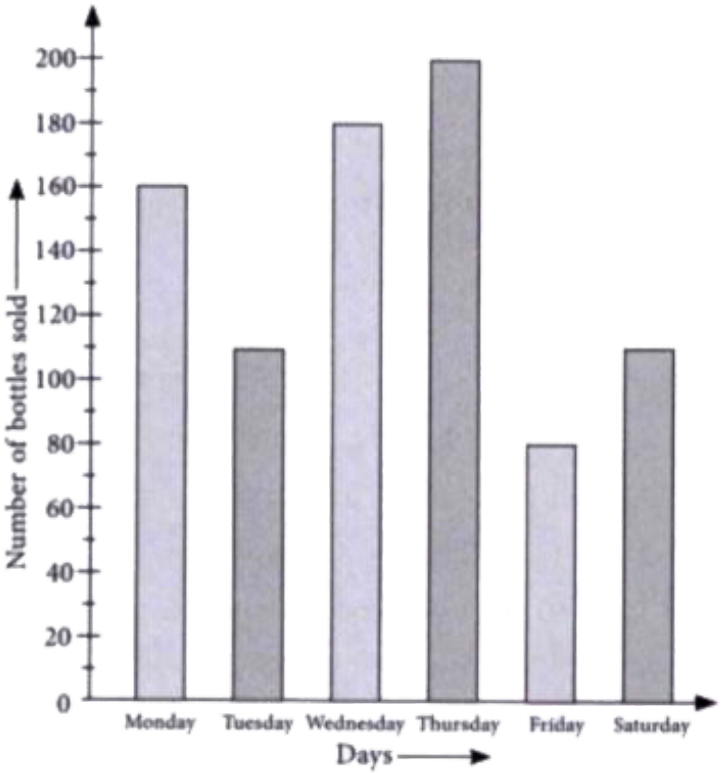
69. The following bar graph represents the number of cold drink bottles sold by a shopkeeper on six consecutive days.



Find the total number of cold drink bottles sold in six days.

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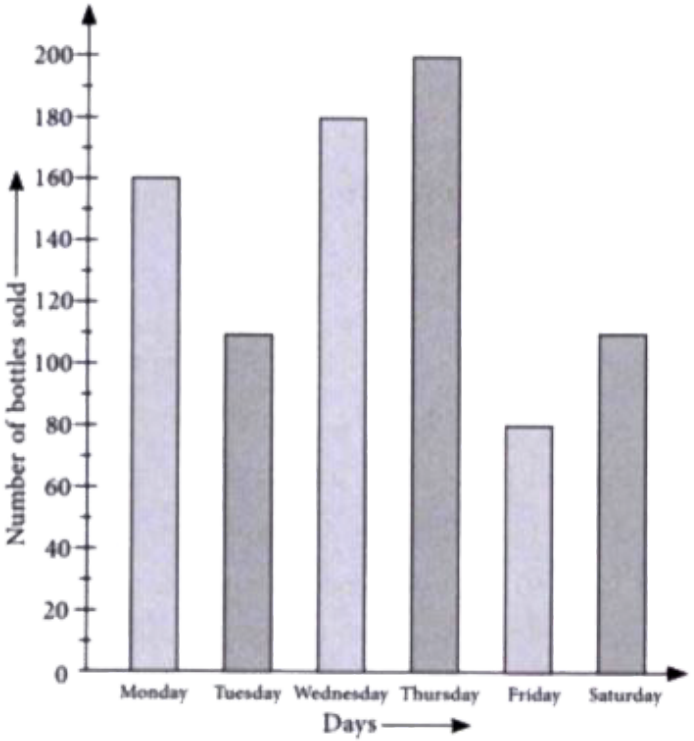
70. The following bar graph represents the number of cold drink bottles sold by a shopkeeper on six consecutive days.



On which two days same number of bottles were sold?

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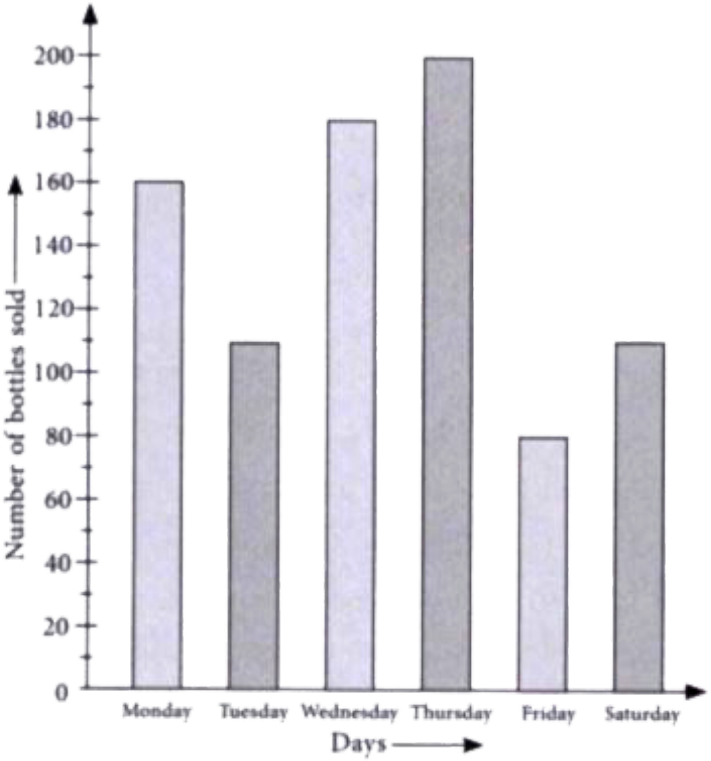
71. The following bar graph represents the number of cold drink bottles sold by a shopkeeper on six consecutive days.



On which day minimum number of bottles were sold?

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72. A rectangular path of 60 m length and 3 m width is covered by square tiles of side 25 cm. How many tiles will there be in one row along its width? How many such rows will be there? Find the number of tiles used to make this path?

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73. Bisect a right angle, using ruler and compasses. Measure each part. Bisect each of these parts. What will be the measure of each of these parts?

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