



MATHS

BOOKS - MTG IIT JEE FOUNDATION

PREP TEST -1

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. $(x \div 6)$ metres

D. $(6 \div x)$ 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. A group of eight tally marks, consisting of four vertical lines crossed by a diagonal line, followed by four more vertical lines.

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 negative integer

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

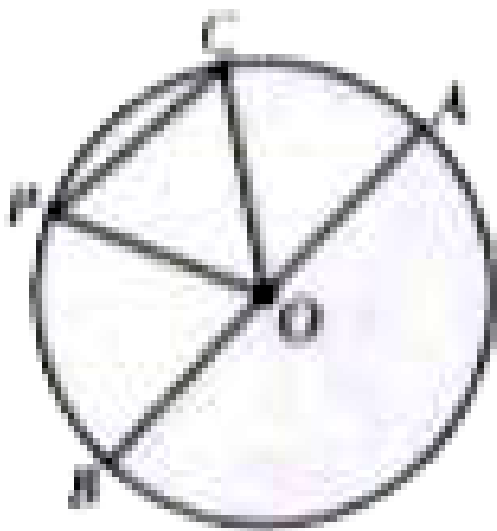
- A. Equilateral triangle
- B. Isosceles triangle
- C. Scalene triangle
- D. Right angled isosceles triangle

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

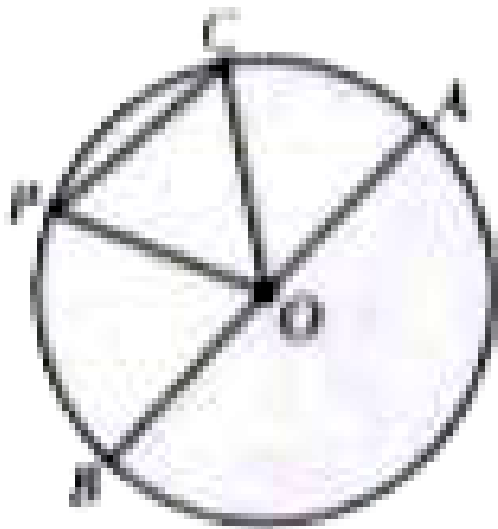
D. OB

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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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	IIII	—
34	—	8
36	IIII II	—
38	IIII —	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.



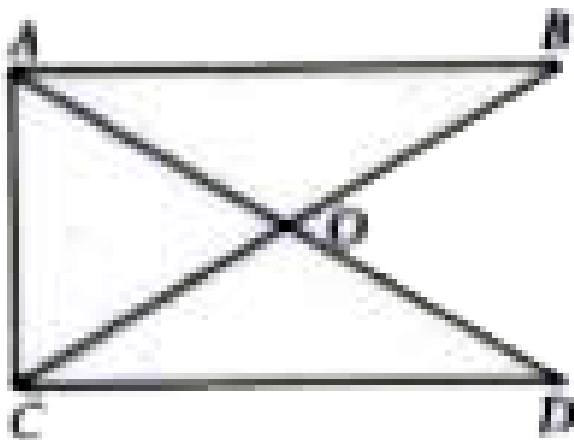
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5. Simplify: $(-53) + 49 + (-27) + (-86) + 19$



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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?



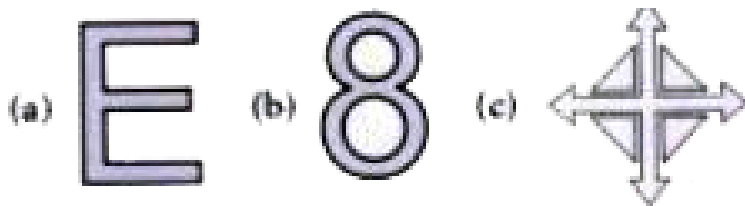
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10. Find the sum of the greatest and the least six digit numbers formed by the digits 2, 0, 4, 7, 6, 5 using each digit only once.



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



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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 rearrangement.

$$56 + 766 + 44 + 234$$



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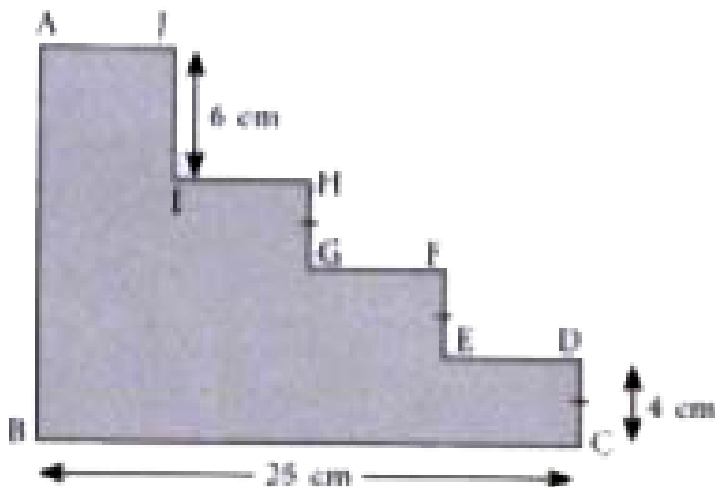
19. Solve them using suitable rearrangement.

$$525 \times 110 \times 2$$



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20. Find the perimeter of the following figure



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21. If m is a whole number 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 commence 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.



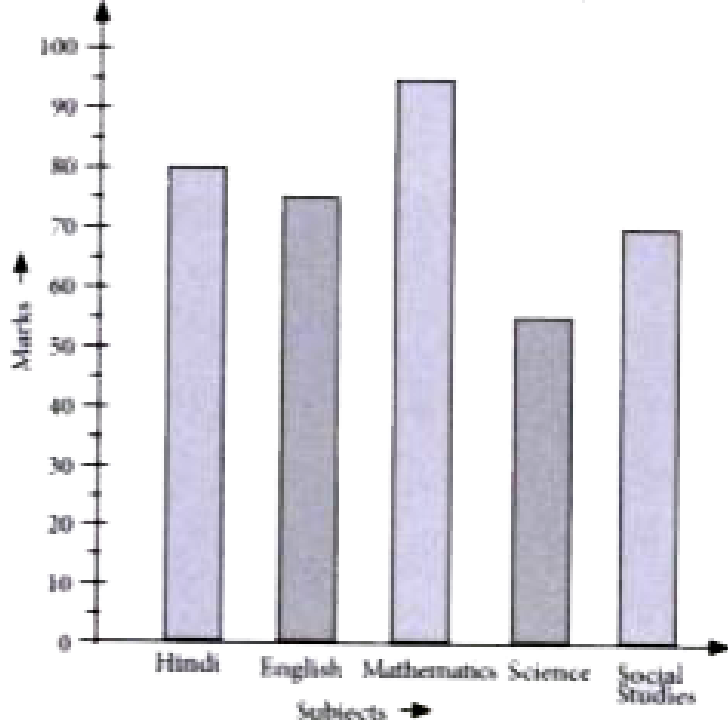
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33. Draw a line segment of length 10cm. Divide it into four equal parts. Measure each of these parts.



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



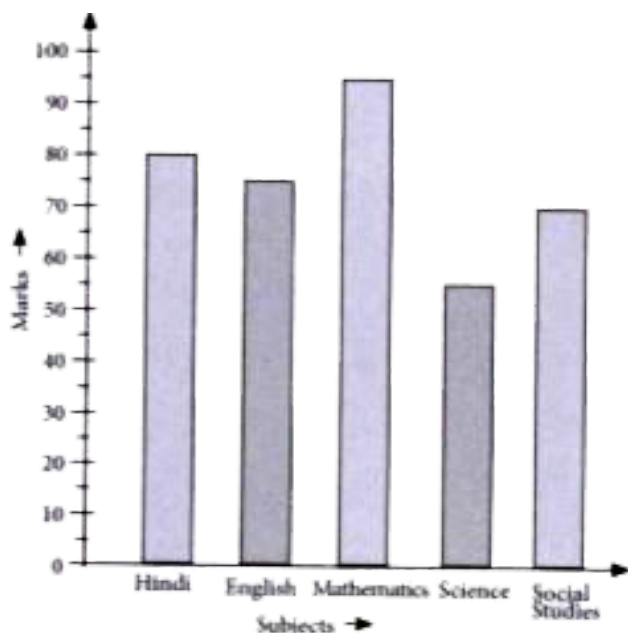
Draw a pictograph for the above data and then answer the following questions.

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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