doubtnut
India's Number 1 Education App

MATHS

BOOKS - HT Olympiad Previous Year Paper

IMO MODEL TEST PAPER - 1

Mathematical Reasoning

1. In a triangle, if the sum of the least and the greatest angle is equal to twice of the third angle, then find the third angle.

A. 30°

B. 120°

C. 60°

D. 90°

Answer: C

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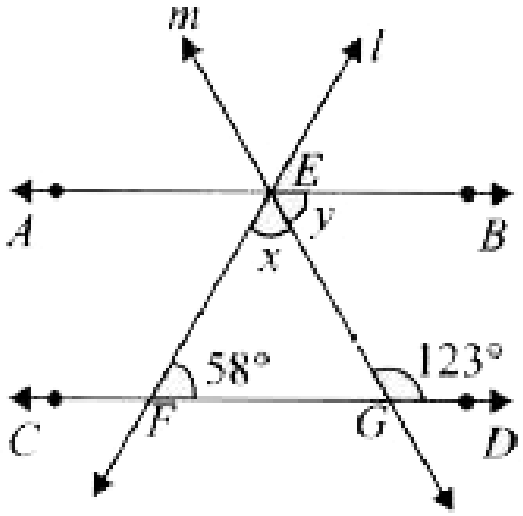
2. In the given figure (not drawn to scale), if AB || CD, then find the value of x - y.



A. 8°

B. 9°

C. 12°

D. 3°

Answer: A

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3. Find the value of x.

$$6(3x+2)-5(6x-1)=6(x-3)-5(7x-6)+12x$$

A. 2

B. -1

C. 1

D. 0

Answer: B

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4. Aparna saves Rs. 500 less than Sumit every month. How long will it take Aparna and Sumit to save Rs.6600 and Rs.9600 respectively?

A. 7 months

B. 6 months

C. 4 months

D. 8 months

Answer: B

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5. If $\frac{a}{8} = \frac{b}{9} = \frac{c}{6}$, then $\frac{a+b+c}{c}$ is equal to _____.

A. 7

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

C. $3\frac{5}{6}$

D. $3\frac{1}{6}$

Answer: C

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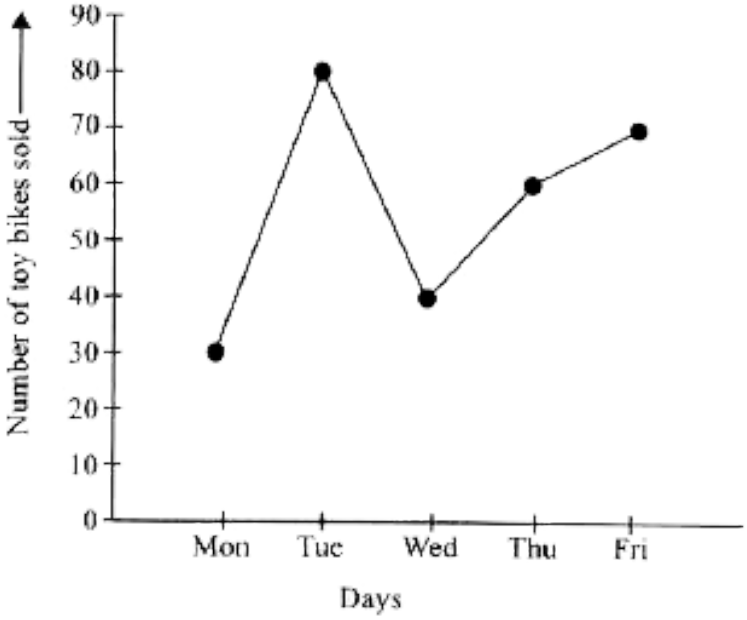
6. The given line graph shows the number of toy bikes sold by Robin in 5 days



If the cost of 1 toy bike is Rs. 33.60, then how much did he earn in 5 days?

A. Rs. 9408

B. Rs. 9240

C. Rs. 8400

D. Rs. 8408

Answer: A

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7. Sanjay and Manoj lent Rs. 30000 each at 6% per annum for a period of 6 years and 10 years respectively. Find the difference in interest paid by them.

A. Rs. 1080

B. Rs. 3600

C. Rs. 7200

D. Rs. 1800

Answer: C

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8. The runs scored by a cricket player in 20 matches are given below.

32, 17, 0, 61, 17, 32, 17, 5, 61, 70, 5, 32, 17, 61, 5, 17, 70, 32, 17, 32

Find the average score of the player.

A. 45

B. 30

C. 35

D. 40

Answer: B

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9. If $3^{2x-3} \times 5^{4x-1} = 5^{2x+1} \times 3^{4x-5}$, then x =

A. -1

B. 2

C. 1

D. -2

Answer: C

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10. Out of 100 beads, there are 43 red beads, 23 blue beads and the rest are yellow. Find the percentage of yellow beads.

A. 0.33

B. 0.34

C. 0.32

D. 0.35

Answer: B

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11. If 20% of x = y, then y% of 20 is same as _____.

A. $\frac{x}{25}$

B. x

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

D. None of these

Answer: A

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12. In a 3 kg fruit cake, 750 gm of dry fruits was used. What is the percentage of the weight of dry fruits used in the cake?

A. 0.75

B. 0.25

C. 0.37

D. $30\ \%$

Answer: B

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13. Simplify : $\frac{\frac{1}{3}+\frac{3}{4}\left(\frac{2}{5}-\frac{1}{3}\right)}{1\frac{2}{3}\text{of}\frac{3}{4}-\frac{1}{4}\text{of}\frac{4}{5}}$

A. $\frac{1}{63}$

B. $\frac{23}{40}$

C. $\frac{23}{55}$

D. $\frac{23}{63}$

Answer: D

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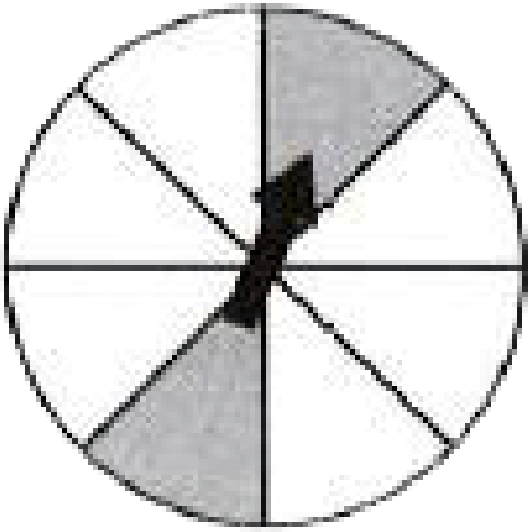
14. Find the probability of the arrow stopped on the shaded part in the given figure.



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

B. $\frac{3}{8}$

C. $\frac{6}{8}$

D. 1

Answer: A

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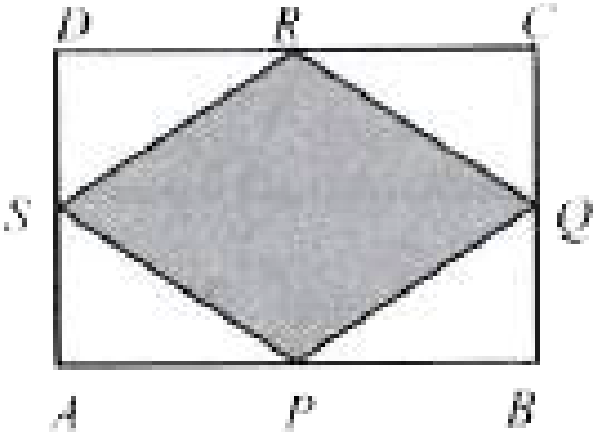
15. ABCD is a rectangle having length 30 cm and breadth 25 cm. P, Q, R and S are midpoints of AB, BC, CD and AD respectively. Find the area of the shaded

region of the figure.



A. $375cm^2$

B. $370cm^2$

C. $475cm^2$

D. $450cm^2$

Answer: A

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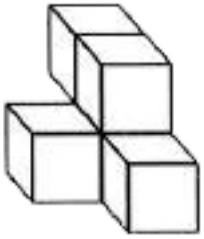
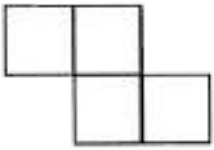
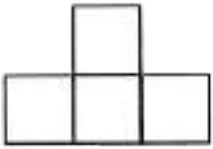
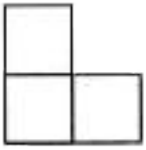
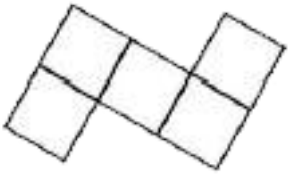
16. Which of the following is the top view of the given solid?



A. 

B. 

C. 

D. 

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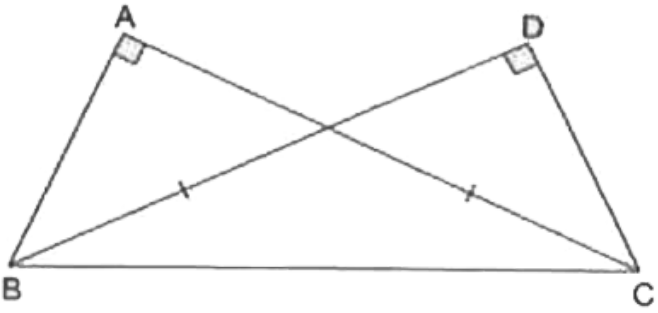
17. In the given figure, triangles ABC and DCB are right angled at A and D respectively and AC = DB. Prove that $\triangle ABC = \triangle DCB$.



A. AAA

B. SAS

C. ASS

D. None of these

Answer: D

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18. If lines AB, AC, AD and AE are parallel to a line l, then _____ .

A. A, B, C, D and E are collinear points.

B. A, B, C, D and E are non-collinear points.

C. Lines AB and AC are parallel and lines AD and AE are perpendicular.

D. None of these

Answer: A

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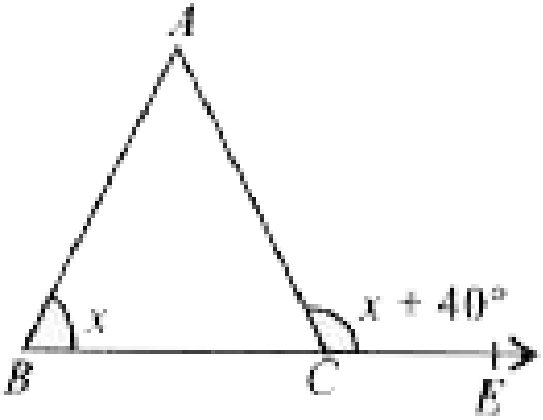
19. In the given figure (not drawn to scale), if AB = AC, then find the value of x.



A. 80°

B. 70°

C. 60°

D. 110°

Answer: B

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20. Select the correct option.

A. Exponent - 3^5, Base -3, Value - 87

B. Exponent - 2^4, Base -5, Value - 32

C. Exponent - 4^2, Base -4, Value - 16

D. Exponent - 5^2, Base -5, Value - 125

Answer: C

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Everyday Mathematics

1. In an examination, Ramesh was asked to find $\frac{3}{14}$ of a certain number. By mistake, he found $\frac{3}{4}$ of that number. His answer was 50 more than the correct answer. The number is _____.

A. $93\frac{1}{3}$

B. $93\frac{1}{7}$

C. $95\frac{1}{3}$

D. $95\frac{1}{5}$

Answer: A

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2. Anita runs around a circular field of radius 50 metres. How much distance did she cover in 3 complete rounds? [Use π = 3.14]

A. 6600 m

B. 942 m

C. 150 m

D. 1043 m

Answer: B

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3. If 18 girls consume 5 kg of rice in a day, then how much quantity of rice will be consumed by 27 girls in a day?

A. 8 kg

B. 12 kg

C. 5.9 kg

D. 7.5 kg

Answer: D

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4. A bag has 14 blue balls and 12 yellow balls. A ball is drawn from the bag without looking into the bag. What is the probability of getting a yellow ball?

A. $\frac{1}{6}$

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

C. $\frac{4}{5}$

D. $\frac{6}{13}$

Answer: D

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5. Salaries of Raman and Mayank are in the ratio 2:3. If the salary of each is increased by 4000, then new ratio becomes 40 : 57. What is Mayank's present salary approximately?

A. Rs. 17,000

B. Rs.20,000

C. Rs.25,500

D. Rs.34,000

Answer: D

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6. Mrs Kirti bought 6 oranges at 3 for Rs.1.00, $\frac{1}{2}$ kg of potatoes at Rs.15.00 per kilogram and a fish weighs $\frac{5}{7}$ kg at Rs.7 per kilogram. How much

amount would she receive, if she gave Rs.50 to the cashier?

A. Rs.35.50

B. Rs.37.50

C. Rs.33.50

D. Rs.39.50

Answer: A

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7. A rectangular plot measuring 90 metres by 50 metres is to be enclosed by wire fencing. If the poles

of the fence are kept 5 metres apart, then how many poles will be needed ?

A. 55

B. 56

C. 57

D. 58

Answer: B

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8. 270 students appeared for an examination, out of which 252 passed. What is the percentage of pass

students?

A. 80%

B. $83\frac{1}{2}\%$

C. $90\frac{1}{3}\%$

D. $93\frac{1}{3}\%$

Answer: D

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9. Sahil is younger than Ranjeet by 8 years. If their ages are in the respective ratio of 7:9, then what is the age of Sahil ?

A. 16 years

B. 18 years

C. 28 years

D. 14 years

Answer: C

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10. If 1/4 kg of tomato costs 10 rupees, then how much will 200 gm tomato costs?

A. 480 paise

B. 540 paise

C. 800 paise

D. 720 paise

Answer: C

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Achievers Section

1. Which of the following statements is true ?

A. If in a triangle, two angles are equal to 60°, then the triangle is equilateral.

B. If the angles of a triangle are in the ratio 1:1:2, then it is a right angled isosceles triangle.

C. If the angles of a triangle are in the ratio 1:2:3, then it is a right angled triangle.

D. All of these

Answer: D

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2. Find the value of P, Q, R, S respectively (in cm).

	Radius	Diameter	Circumference
1.	7 cm	P	S
2.	21 cm	R	Q

A. 14, 132, 44, 42

B. 14, 132, 42, 44

C. 14, 44, 42, 132

D. 14, 42, 44, 132

Answer: B

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3. Fill in the blanks.

Rotation turns an object about a $\underline{P}$ fixed point is the centre of $\underline{Q}$. The angle by which the object rotates is the $\underline{R}$. P point. The

A. P - fixed, Q- rotation, R - angle of rotation

B. P - variable , Q- rotation , R - central angle

C. P - fixed , Q- angle of rotation , R - rotation

D. P - variable , Q- rotation, R - angle of rotation

Answer: A

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4. Statement-I: A median connects a vertex of a triangle to the mid-point of the opposite side.

Statement-II: Perpendicular drawn from any vertex of a triangle to the opposite side is called altitude.

A. Both Statement-I and Statement-II are true.

B. Statement-I is true but Statement-II is false.

C. Statement-I is false but Statement-II is true.

D. Both Statement-I and Statement-II are false.

Answer: A

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5. The marks in Science of 13 students are 31, 37, 29, 41, 35, 35, 38, 36, 35, 38, 32, 29, 43

Find :

(a) Median

(b) Mean

(c) Mode

A. (a) - 35 , (b) - 35, (c) 35

B. (a) - 35, (b) 35.30, (c) 35

C. (a) - 35, (b) - 35, (c) 35.30

D. (a) - 35, (b) 35.30 (c) 35.30

Answer: B

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