



MATHS

BOOKS - CBSE COMPLEMENTARY MATERIAL MATHS (HINGLISH)

PRACTICE TEST-II

Section A

1. Find the LCM of 96 and 360 using fundamental theorem of Arithmetic.

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2. A line segment is of length 5 cm. If the coordinates of its one end are (2,2) and that of the other end are (-1, x), then find the value of x.

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3. PA and PB are two tangents drawn from an external point P to a circle with centre C and radius 4 cm. If $PA \perp PB$, then the length of the chord AB is :

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4. The first three terms of an A.P. respectively are $3y - 1$, $3y + 5$ and $5y + 1$. Then, y equals - 3 (b) 4 (c) 5 (d) 2

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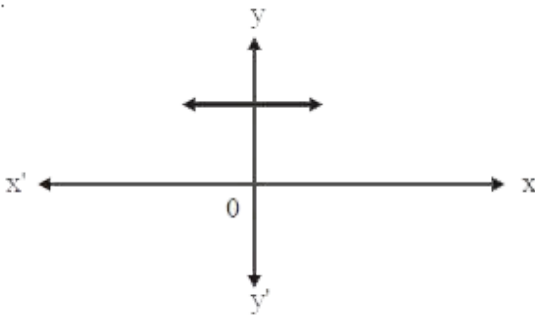
5. A die is thrown once. What is the probability of getting a number greater than 4?

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6. A solid sphere of radius r is melted and recast into the shape of a solid cone of height r . Find radius of the base of the cone.

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7. The graph of $y = p(x)$ is given in the figure. The number of zeros of $p(x)$ are:

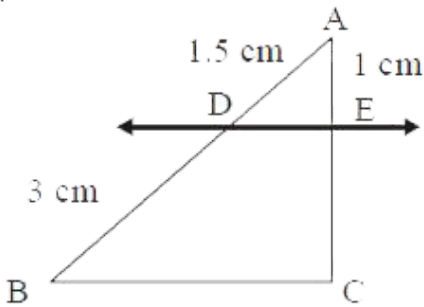


- A. one
- B. three
- C. zero
- D. two

Answer: C

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8. In the figure : $DE \parallel BC$ then the value of EC is :



- A. 1 cm
- B. 2 cm
- C. 1.5 cm
- D. 3 cm

Answer: B::C

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9. From a point Q , the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25 cm. The radius of circle is :

- A. 7 cm
- B. 12 cm
- C. 15 cm
- D. 24.5 cm

Answer: C



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10. The angle of elevation of the top of a 15 meters high tower from a point 15 metres away from its foot is:

- A. 30°
- B. 45°

C. 60°

D. 90°

Answer: B



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11. The difference between circumference and diameter of circle is 30 cm, find the radius of circle.

A. 5 cm

B. 7.7 cm

C. 7 cm

D. 6 cm

Answer: C



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12. Complete the following statements: (i) Probability of an event E + Probability of the event 'not E' = __. (ii) The probability of an event that cannot happen is __ Such an event is called __ (iii) The probability of an event that is certain to happ

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13. A polynominal of degree two is calledpolynomial

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14. The line $x - y = 8$ intersect y - axis at $(0, - 8)$. [True/False]

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15. Number of solution in the given pair of equation is infinitely many solutions

$$x + 2y - 8 = 0$$

$$2x + 4y = 16$$

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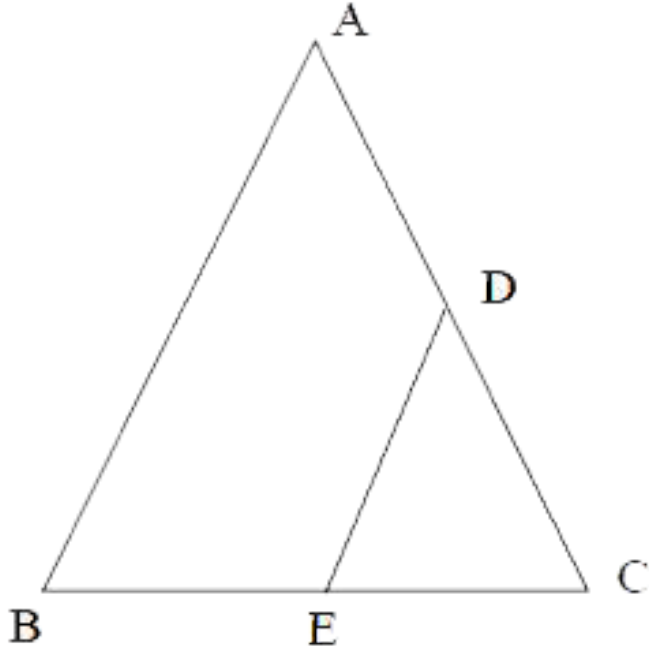
16. $3 \cot^2 60^\circ + \sec^2 45$

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17. Cards marked with numbers 3, 4, 5, ..., 50 are placed in a box and mixed thoroughly. A card is drawn at random from the box, find the probability that the selected card bears a perfect square number.

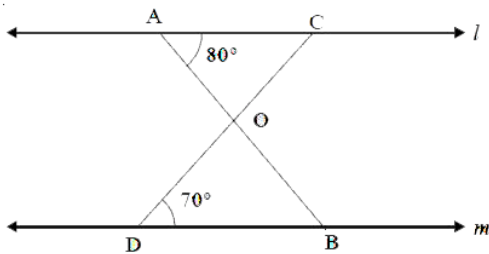
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18. In the figure $\triangle ABC$, $DE \parallel AB$. If $AD = 2x$, $DC = x + 3$, $BE = 2x - 1$, $CE = x$ then find the value of x .



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19. In the figure, $l \parallel m$, $\angle OAC = 80^\circ$, $\angle ODB = 70^\circ$. Is $\triangle OCA \sim \triangle ODB$?



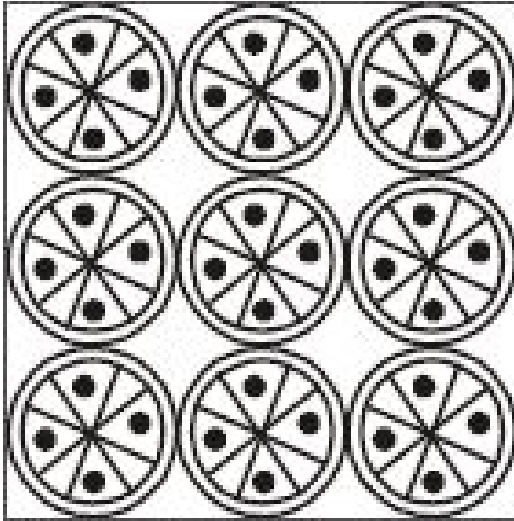
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20. Find the value of p , for which one root of the quadratic equation $px^2 + 14x + 8 = 0$ is 6 times the other.

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Section B

1. On a square handkerchief, nine circular designs each of radius 7 cm are made. Find the area of the remaining portion of the handkerchief





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2. A rational number between $\sqrt{2}$ and $\sqrt{3}$ is



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3. Determine the value of k so that the following linear equations have no solution: $(3k + 1)x + 3y - 2 = 0$, $(k^2 + 1)x + (k - 2)y - 5 = 0$



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4. A cylindrical container is filled with ice-cream, whose diameter is 12 cm and height is 15 cm. The whole ice-cream is distributed to 10 children in equal cones having hemispherical tops. If the height of the conical portion is twice the diameter of its base, find the diameter of the ice-cream.



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5. Find the mean of the following frequency distribution:

Class	0 – 5	5 – 10	10 – 15	15 – 20	20 – 25	25 – 30
Frequency	1	2	2	6	7	2

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6. Cards marked with the numbers from 2 to 151 are placed in a box and mixed thoroughly. One card is drawn at random from this box. Find the probability that the number on the card is:

(i) a prime number less than 75.

(ii) an odd number.

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Section C

1. Evaluate : $(\cos^2 20^\circ + \cos^2 70^\circ) + \frac{\cot 25^\circ}{\tan 65^\circ} + \cot 5^\circ \cot 10^\circ \cot 60^\circ \cot 80^\circ \cot 85^\circ$.

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2. BL and CM are medians of a triangle ABC right angled at A. Prove that

$$4(BL^2 + CM^2) = 5BC^2$$

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3. If α and β are zeroes of the polynomial $P(x) = 2x^2 + 11x + 5$, find

the value of $\frac{1}{\alpha} + \frac{1}{\beta} - 2\alpha\beta$

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4. Prove that:

$$\frac{\sin \theta}{1 - \cos \theta} + \frac{\tan \theta}{1 + \cos \theta} = \sec \theta + \cot \theta + \sec \theta \cos \theta - \cos \theta$$

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5. $\frac{1}{x+4} - \frac{1}{x-7} = \frac{11}{30}, x \neq -4, 7$



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6. Show that one and only one out of n , $(n+2)$ and $(n+4)$ is divisible by 3, where n is any positive interger.



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7. The sum of first six terms of an A.P. is 42. The ratio of its 10th term to 30th term is 1 : 3. Calculate the first and 13th term of the A.P.



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8. In the given figure AB is a chord of a circle, with centre O , such that $AB = 16\text{cm}$ and radius of circle is 10 cm. Tangent at A and B intersect each order at P . Find the length of PA .



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9. Places A and B are 100 km apart on a highway. One car starts from A and another from B at the same time. If the cars travel in the same direction at different speeds, they meet in 5 hours. If they travel towards each other, they meet in 1 hour. What are the speeds of the two cars

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10. Determine the ratio in which the line $3x + y - 9 = 0$ divides the segment joining the points (1,3) and (2, 7).

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11. The angle of elevation of the top of a building from the foot of the tower is 30° and the angle of elevation of the top of the tower from the foot of the building is 60° . If the tower is 60 m high, find the height of the building.

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12. Due to sudden floods, some welfare associations jointly requested the government to get 100 tents fixed immediately and offered to contribute 50% of the cost, if the lower part of each tent is of the form of a cylinder of diameter 4.2 m and height 4 m with the conical upper part of same diameter but of height 2.8 m, and the canvas to be used costs 100 per sq. m, find the amount the associations will have to pay. What values are shown by these associations [Use $\pi = \frac{22}{7}$]



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13. The following distribution gives the daily income of 50 workers of a factory:

Daily income	200 – 250	250 – 300	300 – 350	350 – 400	400 –
Number of workers	10	5	11	8	6

Convert the distribution to a less than type cumulative frequency distribution and draw its ogive. Hence obtain the median daily income.



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14. Draw a circle of radius 5 cm. From a point P, 8 cm away from its centre, construct a pair of tangents to the circle. Measure the length of each one of the tangents.



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