MATHS

BOOKS - CBSE COMPLEMENTARY MATERIAL MATHS (HINGLISH)

PRACTICE TEST-1

Section A

1. If p and q are co-prime numbers, then p^2 and q^2 are (a) coprime (b) not coprime (c) even (d)

odd

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2. If $\Delta ABC \sim \Delta DEF$, $BC = 3cm$, $EF = 4cm$ and area of $\Delta ABC = 54sqcm$ then find the area of ΔDEF

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3. If $5\tan\theta - 4 = 0$, then the value of $\frac{5\sin\theta - 4\cos\theta}{5\sin\theta + 4\cos\theta}$ is

A. $\frac{5}{3}$

B. $\frac{5}{6}$

C. 0

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

Answer: c

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4. A die it thrown once. What is the probability of getting a prime number?

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

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

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

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

Answer: c

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5. If the equation $x^2 + 4x + k = 0$ has real and distinct roots, then $k < 4$ (b) $k > 4$ (c) $k \geq 4$ (d) $k \leq 4$

A. $k < 4$

B. $k > 4$

C. $k \geq 4$

D. $k \leq 4$

Answer: a

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6. If the circumference and the area of a circle are numerically equal, then diameter of the circle is (a) $\frac{\pi}{2}$ (b) 2π (c) 2 (d) 4

A. $\frac{\pi}{2}$ units

B. 2π units

C. 2 units

D. 4 units

Answer: d

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7. The next term of the AP $\sqrt{7}, \sqrt{28}, \sqrt{63}$,... is

A. $\sqrt{70}$

B. $\sqrt{84}$

C. $\sqrt{97}$

D. $\sqrt{112}$

Answer: d

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8. The distance between the points $(a\cos\theta + b\sin\theta, 0)$ and $(0, a\sin\theta - b\cos\theta)$.

A. $a^2 + b^2$

B. $a + b$

C. $a^2 - b^2$

D. $\sqrt{a^2 + b^2}$

Answer: d

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9. If a quadratic polynomial $f(x)$ is a square of a linear polynomial, then its two zeroes are coincident. (True/false)

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10. From a point lying on the circle, infinite number of targents can be drawn. (True / False)

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11. For what value of p, (- 4) is a zero of the polynomial $x^2 - 2x - (7p + 3)$?

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12. Write the number of solutions of the following pair of linear equations:

$x + 2y - 8 = 0, \quad 2x + 4y = 16$

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13. Find the area of a triangle with vertices (0,4) , (0,2) and (3,0)

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14. If A(1,2) , B(4,3) and C (0,0) are three vertices of parallelogram ABCD , find the coordinates of D.

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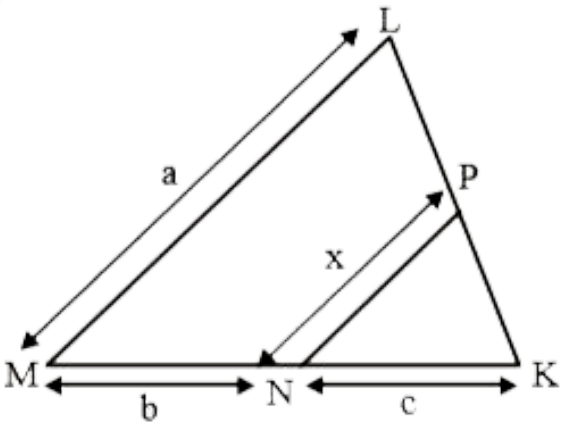
15. In figure, $PN \mid\mid LM$. Express x in terms of a,b and c, where a, b and c are lengths of LM,

MN and NK respectively.



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16. State the basic proportionality theorem.

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17. Find the probability that a non-leap year contains exactly 53 Mondays.

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18. If the total surface area of a solid hemisphere is $462cm^2$, find its diameter.

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19. A pole casts a shadow of length $2\sqrt{3}$ m on the ground when the sun's elevation is 60°.

The height of the pole is

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20. If E be an event such that $P(E) = \frac{3}{7}$, what is P(not E) equal to ?

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Section B

1. Given that $\sqrt{2}$ is a irrational prove that $\left(5+3\sqrt{2}\right)$ is an irrational number

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2. For what value of 'k' the system of equation $kx+3y=1, 12x+ky=2$ has no solution.

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3. The length of the minute hand of a clock is 14cm. Find the area swept by the minute hand in 5 minutes.

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4. Two cubes each of volume $27cm^3$ are joined end to end to form a solid. Find the surface area of the resulting cuboid.

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5. The following distribution table shows the marks scored by 140 students in an examination :

Marks	0–10	10–20	20–30	30–40	40–50
Number of students	20	45	80	55	40

Calculate the mode of the distribution.

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6. An integer is chosen at random between 1 and 100. Find the probability that it is (i) divisible by 8 (ii) not divisible by 8

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Section C

1. Find the HCF os 180,252 and 324 by prime factorization method.

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2. Find all zeroes of the polynomial $2x^4 - 9x^3 + 5x^2 + 3x - 1$ if two of its zeroes are $2 + \sqrt{3}$ and $2 - \sqrt{3}$

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3. Solve for x:

$$\frac{1}{(x-1)(x-2)} + \frac{1}{(x-2)(x-3)} = \frac{2}{3},$$

xin1,2,3`

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4. The ninth term of an A.P. is equal to seven times the second term and twelth term exceeds five times the third term by 2. Find the term and the common difference.

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5. Prove that, in a right-angled triangle, the square of hypotenuse is equal to the sum of the square of remaining two sides.

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6. Two tangents TP and TQ are drawn to a circle with centre O from an external point T. Prove that $\angle PTQ = 2\angle OPQ$.

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7. Prove that $(\cot\theta - \operatorname{cosec}\theta)^2 = \dfrac{1-\cos\theta}{1+\cos\theta}$

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8. In $\Delta ABC, \angle B = 90^\circ, BC = 5cm$ and AC - AB = 1 cm. Find the value of sinC and cos C.

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9. Draw the graph of the following equations and answer the following questions :

$x + y = 5\ x - y = 5$

(i) Find the solution of the equation from the graph.

(ii) Shade the triangular region formed by the lined and the y-axis.

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10. If the coordinates of points A and B are (-2, -2) and (2, -4) respectively, find the coordinates of the point P such that $AP = \frac{3}{7}AB$, where P lies on the line segment AB.

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11. Construct ΔABC with BC = 7 cm, $\angle B = 60^\circ$ and AB = 6cm. Construct another

triangle whose sides are $\frac{3}{4}$ times the corresponding sides of ΔABC.

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12. As observed from the top of a 100 m high light house from the sea level, the angles of depression of two ships are 30° and 45° If one ship is exactly behind the other one on the same side of the light house, find the distance between the two ships.

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13. A hollow sphere of internal and external diameters 4 cm and 8 cm is melted to form a cone of base diameter 8 cm. Find the height and the slant height of the cone.

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14. Find the mean and median of the following distribution :

Class	11–13	13–15	15–17	17–19	19–21	21–23	23–25
Frequency	3	6	9	13	18	5	4

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