

PRACTICE QUESTIONS SHEET FOR MATHS CLASS 10

A Compilation By

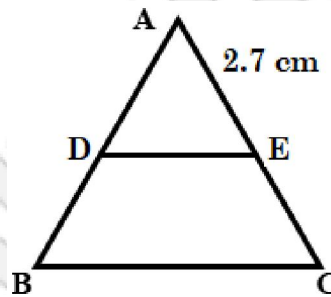
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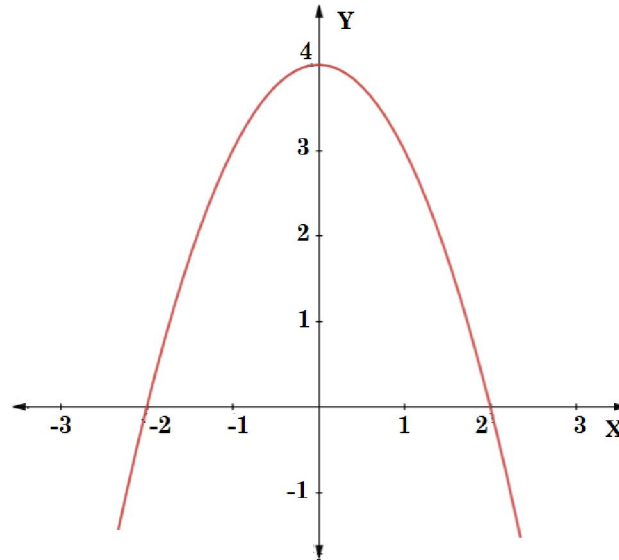
01. The sum of exponents of prime factors in the prime factorisation of 196 is
(a) 3 (b) 4 (c) 5 (d) 2
02. The pair of equations $x + 2y + 5 = 0$ and $-3x - 6y + 1 = 0$ have
(a) a unique solution (b) exactly two solutions
(c) infinitely many solutions (d) no solution
03. Sides of two similar triangles are in the ratio 4 : 9, Areas of these triangular are in the ratio
(a) 2 : 3 (b) 4 : 9 (c) 81 : 16 (d) 16 : 81
04. The altitude of an equilateral triangle having the length of its side as 12 cm, is
(a) $6\sqrt{2}$ cm (b) 6 cm (c) 8.5 cm (d) $6\sqrt{3}$ cm
05. When a die is thrown, the probability of getting an even number less than 4 is
(a) $\frac{2}{3}$ (b) 1 (c) $\frac{5}{6}$ (d) $\frac{1}{6}$
06. If $x = \sin 60^\circ$, $y = \tan 60^\circ$ and $z = \cos 90^\circ$, then $(x + y)^z =$
(a) 1 (b) 0 (c) $\frac{3\sqrt{3}}{2}$ (d) $3\sqrt{3}$
07. Let $\sec \theta + \tan \theta = x$. The value of $\sec \theta$ is
(a) $\frac{1}{2} \left(x - \frac{1}{x} \right)$ (b) $\frac{x^2 - 1}{x^2 + 1}$ (c) $\frac{1}{2} \left(x + \frac{1}{x} \right)$ (d) None of these
08. The decimal representation of $\frac{15}{400}$ will
(a) terminate after 1 decimal place (b) terminate after 2 decimal place
(c) terminate after 3 decimal place (d) terminate after 4 decimal place
09. The value of K for which the system of equations $x - 2y = 3$ and $3x + Ky = 1$ has a unique solution is
(a) $K = -6$ (b) $K \neq -6$ (c) $K = 0$ (d) No value
10. The distance of the point $P(-3, -4)$ from the x - axis (in units) is
(a) 3 (b) -3 (c) 4 (d) 5
11. 5 is the prime factor of
(a) 78 (b) 240 (c) 1001 (d) 1547
12. $\text{HCF} \times \text{LCM}$ for the numbers 150 and 10 is

- (a) 1500 (b) 150 (c) 10 (d) None of these
13. The value of $(\sin 30^\circ + \cos 30^\circ) - (\sin 60^\circ + \cos 60^\circ)$ is
 (a) -1 (b) 0 (c) 1 (d) 2
14. Which of these is equivalent to $\frac{2 \tan x(\sec^2 x - 1)}{\cos^3 x}$?
 (a) $2 \tan^3 x \operatorname{cosec} x$ (b) $2 \cot^3 x \operatorname{cosec}^3 x$
 (c) $2 \tan^3 x \sec^3 x$ (d) $2 \cot^3 x \sec^3 x$
15. The diameter of a wheel is 1 m. The number of revolutions it will make to travel a distance of 22 km will be
 (a) 2800 (b) 4000 (c) 5500 (d) 7000
16. It is given that $\triangle ABC \sim \triangle DEF$, $\angle A = 30^\circ$, $\angle C = 50^\circ$, $AB = 5$ cm, $AC = 8$ cm and $DF = 7.5$ cm. Then which of the following is true?
 (a) $DE = 12$ cm, $\angle F = 50^\circ$ (b) $DE = 12$ cm, $\angle F = 100^\circ$
 (c) $EF = 12$ cm, $\angle D = 100^\circ$ (d) $EF = 12$ cm, $\angle D = 30^\circ$

17. In figure $DE \parallel BC$. Also $\frac{AD}{DB} = \frac{3}{2}$ and $AE = 2.7$ cm.

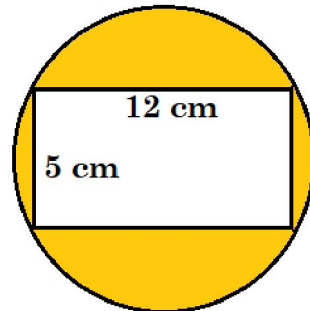


- Then EC is equal to
 (a) 2.0 cm (b) 1.8 cm (c) 4.0 cm (d) 2.7 cm
18. If $\alpha + \beta = 90^\circ$ and $\alpha = 2\beta$. Then $\cos^2 \alpha + \sin^2 \beta$ is equal to
 (a) 1 (b) $\frac{1}{2}$ (c) $\frac{3}{4}$ (d) 2
19. The area of the triangle formed by a line $\frac{x}{a} + \frac{y}{b} = 1$ with the coordinate axis is
 (a) ab (b) $2ab$ (c) $\frac{ab}{2}$ (d) $\frac{ab}{4}$
20. A bag contains 3 red balls, 5 white balls and 7 black balls. What is the probability that a ball drawn from the bag at random will be neither red nor black?
 (a) $\frac{1}{5}$ (b) $\frac{1}{3}$ (c) $\frac{7}{15}$ (d) $\frac{8}{15}$
21. Three bulbs red, green and yellow flash at intervals of 80 seconds, 90 seconds and 110 seconds. All three flash together at 8:00 am. At what time will the three bulbs flash altogether again?
 (a) 8:12 am (b) 9:12 am (c) 10:12 am (d) 11:12 am
22. What will be the sum of the zeroes of polynomial of the shown graph?

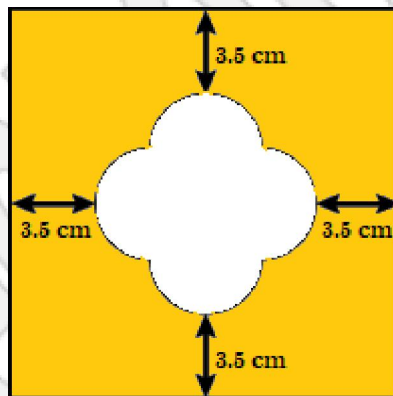


- (a) 2, -2 (b) -4 (c) 0 (d) 2
23. The two legs AB and BC of a right triangle ABC are in the ratio 1 : 3. What will be the value of $\sin C$?
- (a) $\sqrt{10}$ (b) $\frac{1}{\sqrt{10}}$ (c) $\frac{3}{\sqrt{10}}$ (d) $\frac{1}{2}$
24. The sum of the numerator and denominator of a fraction is 12. If the denominator is increased by 3. The fraction becomes $\frac{1}{2}$, then the fraction is
- (a) $\frac{4}{7}$ (b) $\frac{5}{7}$ (c) $\frac{6}{7}$ (d) $\frac{8}{7}$
25. If the HCF of 65 and 117 can be expressed as $65m - 117$, then the value of m is
- (a) 4 (b) 2 (c) 11 (d) 3
26. When a die is thrown once, the probability of getting an odd number less than 3 is
- (a) $\frac{1}{6}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) 0
27. Let $P(E)$ be the probability. If a number x is chosen from the numbers 1, 2, 3 and a number y is selected from the numbers 1, 4, 9 then $P(xy < 9)$ is
- (a) $\frac{3}{9}$ (b) $\frac{4}{9}$ (c) $\frac{1}{9}$ (d) $\frac{5}{9}$
28. If $a \cos \theta + b \sin \theta = m$ and $a \sin \theta - b \cos \theta = n$, then $a^2 + b^2$ is equal to
- (a) $m^2 + n^2$ (b) $m^2 n^2$ (c) $n^2 = m^2$ (d) $m^2 + n^2$
29. Three points lie on a vertical line. Which of the following could be those points?
- (a) (-8, 3) (-8, 8) (8, 7) (b) (-8, -7) (-8, -8) (-8, 100)
- (c) (4, 3) (5, 3) (-12, 3) (d) (0, 4) (4, 0) (0, 0)
30. If $P(\text{occurrence of event E}) = \frac{3}{4}$, then $P(\text{non-occurrence of event E}) =$
- (a) $\frac{1}{2}$ (b) $\frac{1}{4}$ (c) $\frac{1}{9}$ (d) $\frac{3}{4}$
31. The equation of the perpendicular bisector of the line segment joining A(4, 5) and B(-2, 3) is
- (a) $2x - y + 7 = 0$ (b) $3x - 2y - 7 = 0$
- (c) $3x - y - 7 = 0$ (d) $3x + y - 7 = 0$

32. If $\sin \theta = \frac{1}{3}$, the value of $(2 \cot^2 \theta + 2)$ is
 (a) 16 (b) 20 (c) 12 (d) 18
33. The area of the shaded region (after rounding-off), in the figure is $\left(\text{use } \pi = \frac{22}{7} \right)$

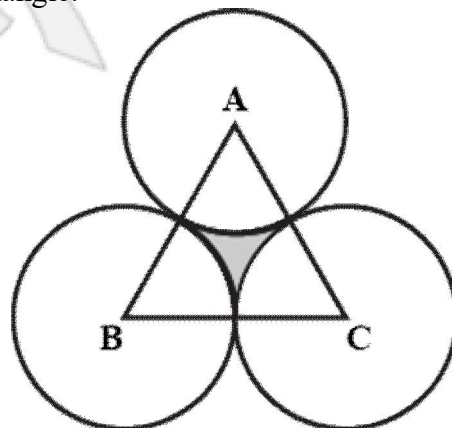


- (a) 72 cm^2 (b) 73 cm^2 (c) 70 cm^2 (d) None of these
34. The difference between the circumference and radius of a circle is 37 cm. The area of circle is
 (a) 111 cm^2 (b) 184 cm^2 (c) 154 cm^2 (d) 259 cm^2
35. If the point $P(K, 0)$ divides the line segment joining the points $A(2, -2)$ and $B(-7, 4)$ in the ratio 1 : 2, then the value of K is
 (a) 1 (b) 2 (c) -2 (d) -1
36. Isha shaded a square card board (with side length of 23 cm), as shown below.




Which of the following is closest to the area of the shaded region?

- (a) 364.52 cm^2 (b) 439.9 cm^2 (c) 492.4 cm^2 (d) 572.4 cm^2
37. ΔABC is an equilateral triangle.



The area of the shaded region, if the radius of each of the circle is 1 cm, is

- (a) $2 - \frac{\pi}{3}$ (b) $\sqrt{3} - \pi$ (c) $\sqrt{3} - \frac{\pi}{2}$ (d) $\sqrt{3} - \frac{\pi}{4}$
38. If 2 and α are zeroes of $2x^2 - 6x + 2$ then the value of α is
 (a) 2 (b) 3 (c) 1 (d) 5
39. The area of the incircle of an equilateral triangle of side 42 cm is
 (a) $22\sqrt{3}$ cm² (b) 231 cm² (c) 462 cm² (d) 924 cm²
40. One of the solutions of $2x + y = 4$ is
 (a) $x = 2, y = 0$ (b) $x = 1, y = 1$ (c) $x = -1, y = 1$ (d) $x = 4, y = -2$

 If you've any doubt or want help, please post the image (screenshot) of your question in the Telegram Group <https://t.me/Mathematicia4Tenth>

 For YouTube Lectures (MCQ Type) :

Visit YouTube channel **Mathematicia By O.P. Gupta**

 For Chapter-wise Assignments :

Visit <https://theopgupta.com/>

ANSWER KEY

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 01. | (b) | 02. | (d) | 03. | (d) | 04. | (d) | 05. | (d) | 06. | (a) |
| 07. | (c) | 08. | (d) | 09. | (b) | 10. | (c) | 11. | (b) | 12. | (a) |
| 13. | (b) | 14. | (c) | 15. | (d) | 16. | (b) | 17. | (b) | 18. | (b) |
| 19. | (c) | 20. | (b) | 21. | (c) | 22. | (c) | 23. | (b) | 24. | (b) |
| 25. | (b) | 26. | (a) | 27. | (d) | 28. | (d) | 29. | (b) | 30. | (b) |
| 31. | (d) | 32. | (d) | 33. | (b) | 34. | (c) | 35. | (d) | 36. | (a) |
| 37. | (c) | 38. | (c) | 39. | (c) | 40. | (a) | | | | |