

1. When a natural number K is divided by its reciprocal, the answer is
 A. 1 B. $2K$ C. \sqrt{K} D. K^2
2. Three men can complete a job in 6 days. How many days will it take two men to complete the same job if they work at the same rate?
 A. 4 B. 9 C. 12 D. 18
3. Rajen bought a laptop on terms where he paid a \$200 deposit and made monthly repayments of \$100 for 3 years. How much did he pay for the laptop?
 A. \$500 B. \$3400 C. \$3600 D. \$3800
4. $2x - 3 - (3 - 2x)$ equals
 A. 0 B. $4x$ C. 6 D. $4x - 6$
5. The capacity in litres of a storage capacity tank with volume 4.7 m^3 is
 A. 47 B. 470 C. 4700 D. 47000
6. If $a < -1$ and $0 < b < 1$, which of the following numbers is the smallest?
 A. $-a^{-1}$ B. $-a$ C. $-b$ D. $-b^{-1}$
7. The gradient of a line passing through the points $(0, 1)$ and $(-\frac{1}{2}, 0)$ is
 A. -2 B. -1 C. 1 D. 2
8. The value of $1 - 2 + 3 - 4 + 5 - 6 + \dots + 99 - 100$ is
 A. -50 B. -51 C. -99 D. -100
9. What percentage of x is y ?
 A. $\frac{100x}{y}$ B. $\frac{100y}{x}$ C. $\frac{100y}{x+y}$ D. $\frac{x}{y}$
10. How many times are the hands of a clock perpendicular in a day?
 A. 42 B. 44 C. 46 D. 48

11. In 200 m race, Anna covers the distance in 72 seconds and Bina in 90 seconds. In this race Anna beats Bina by:
A 40 m B 45 m C 50m D 55 m
12. The letters D, E and F are used to make a three-letter company name. Each letter is used only once. How many different company names can be made?
A. 3 B. 6 C. 9 D. 27
13. At a party, every attendee shakes hands with every other attendee once. If 10 people are at the party, how many handshakes take place?
A 45 B 50 C 55 D 90
14. If the cost of 1 bottle of juice and 2 packets of biscuits is \$10, what is the cost of 3 bottles of juice and 6 packets of biscuits?
A. \$20 B. \$22 C. \$28 D. \$30
15. A billion is represented by a 1 followed by
A. 3 zeros B. 6 zeros C. 9 zeros D. 12 zeros
16. Four times a number, x , is subtracted from 12. The result is 9. The correct mathematical equation for the above is given by
A. $4x - 12 = 9$ B. $12 - 4x = 9$ C. $4(x - 12) = 9$ D. $9 - 4x = 12$
17. A 8 cm x 8 cm x 8 cm wooden cube is painted and is then cut into 1 cm x 1 cm x 1 cm smaller cubes. How many small cubes are unpainted?
A. 125 B. 216 C. 343 D. 512
18. When factorised $1 - 4m^2$ is equal to
A. $(1 + 2m)(1 - 2m)$ B. $(1 + 4m)(1 - 4m)$ C. $4(1 - m)$ D. $m^2(m - 1)$
19. If it takes Raj 15 minutes to cut a board into four pieces, how long would it take him to cut the same type board into 12 pieces?
A. 40 minutes B. 45 minutes C. 50 minutes D. 55 minutes

20. A pine tree is 2.3 m tall. It grows at a rate of 1.4 m per year. How long will it take the tree to grow to a height of 6.5 m?

- A. 1 year B. 2 years C. 3 years D. 4.6 years

21. What is the equation of the axis of symmetry of the function $y = x^2$?

- A. $x = 0$ B. $y = 0$ C. $y = x$ D. $y = 2$

22. A point with the coordinates $(1, k)$ lies on the line $y = x + 4$. The value of k is

- A. 1 B. 4 C. 5 D. 9

23. The angle bisectors of a triangle meet at the

- A, centroid B. incentre C. orthocentre D. circumcentre

24. The line which joins a vertex of a triangle to the midpoint of the opposite side is called

- A. median B. altitude C. mediator D. bisector

25. The price of a radio is \$230, which includes 15% VAT. What is the amount of VAT included in this price?

- A. \$15 B. \$30 C. \$34.50 D. \$200

26. The time on a digital clock is 5:55. How many minutes will pass before the clock next shows a time with all digits identical?

- A. 71 B. 72 C. 255 D. 316

27. The gradient of the line $2x - y = 8$ is

- A. -2 B. -1 C. 2 D. 8

28. What is the length of the diagonal of a rectangle with dimensions 3 m by 4 m?

- A. 5 B. 3 C. 2 D. 1

29. If $x^2 - 25 = 0$ then

- A. $x = 5$ only B. $x = -5$ only C. $x = \pm 5$ D. $x = \pm 25$

30. When factorised $x^2 - 10x + 25$ is equal to

- A. $(x - 5)^2$ B. $(x - 10)^2$ C. $(x + 5)^2$ D. $(x + 10)^2$