MATHS

BOOKS - VGS BRILLIANT MATHS (TELUGU ENGLISH)

QUADRATIC EQUATIONS (MULTIPLE CHOICE QUESTION)

Quadratic Equations Multiple Choice Question

1. $2x^2 + 3x - 1 = 0$ is a quadratic equation the roots are α, β then $\alpha^2 + \beta^2 =$..........

A. $\dfrac{13}{4}$

B. $\dfrac{-13}{4}$

C. $\dfrac{4}{13}$

D. $\dfrac{-4}{13}$

Answer: A

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2. $3x^2 - 5x + 2 = 0$ is a quadratic equation the roots are α, β then $\alpha^3 + \beta^3$ is..............

A. $\dfrac{27}{35}$

B. $\dfrac{35}{27}$

C. $\dfrac{-35}{27}$

D. $\dfrac{-27}{35}$

Answer: B

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3. $x^2 + px + q = 0$ is a quadratic equation, the roots are α, β then $\alpha^4 + \beta^4$ is...........

A. $p^4 + 4p^2q + 2q^2$

B. $p^4 + q^4 - 2p^2q^2$

C. $p^4 - 4p^2q + 2q^2$

D. $p^4 + q^4 + 2p^2q^2$

Answer: C

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4. The quadratic equation whose roots are reciprocal of the roots of the equation $ax^2 + bx + c = 0$ is-

A. $cx^2 - bx - a = 0$

B. $cx^2 - bx = 0$

C. $cx^2 + bx - a = 0$

D. $cx^2 + bx + a = 0$

Answer: D

5. IF $a > 0$ then the minimum value of $3x^2 + 4x + 1$ is.......

A. $\dfrac{-1}{3}$

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

C. $\dfrac{2}{3}$

D. $\dfrac{-2}{3}$

Answer: A

6. If $x > 0$, then the minimum value of $\dfrac{11}{3} + 5\left(x - \dfrac{7}{2}\right)^2$ is.........

A. $\dfrac{3}{11}$

B. $\dfrac{11}{3}$

C. $\dfrac{-3}{11}$

D. $\dfrac{-11}{3}$

Answer: B

7. Examine $3y^2 - 8xy - 3x^2 - 29x + 3y - 18$

is re-solvable into two linear factors.

A. $\Delta \neq 0$

B. $\Delta^2 = 0$

C. $\Delta = 0$

D. $\Delta^3 = 0$

Answer: C

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8. Solve:x(x+y+z)=6,

$$y(x + y + z) = 12, z(x + y + z) = 18$$

    A. x=0

    B. x=-2

    C. x=3

    D. x=± 1

Answer: D

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9. The area of a rectangular plot is $528m^2$. The length of the plot is one more than twice its breadth. The length and breadth of the plot are

    A. 33m,16m

    B. 32m,15m

    C. 30m,14m

    D. 28m,12m

Answer: A

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10. IF $x^2 - 4x + 3 = 0, x^2 - 5x + k = 0$ have

a common root, then k

    A. 1,3

    B. 4,6

    C. 1,4

    D. 3,6

Answer: B

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11. IF one root of $x^2 - x - k = 0$ is square that of the other, then k=.........

A. 1

B. $2 + \sqrt{5}$

C. $2 - \sqrt{5}$

D. $2 \pm \sqrt{5}$

Answer: D

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12. IF the sum of the roots of $ax^2 + bx + c = 0$ is equal to the sum of the squares of the roots, then.........

A. $b^2 + ab = 2ac$

B. $a^2 + bc = 2ab$

C. $c^2 + ab = 2bc$

D. None

Answer: A

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13. IF $\alpha^2 = 5\alpha - 6$, $\beta^2 = 5\beta - 6$, $\alpha \neq \beta$ then the equation whose roots $\dfrac{\alpha}{\beta}, \dfrac{\beta}{\alpha}$ is......

A. $x^2 + 5x + 6 = 0$

B. $x^2 + 5x - 6 = 0$

C. $6x^2 - 13x + 6 = 0$

D. $6x^2 + 13x + 6 = 0$

Answer: C

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14. $\sqrt{a + \sqrt{a + \sqrt{a + ...\infty}}} = $ ....

A. a

B. $\dfrac{1 + \sqrt{4a + 1}}{2}$

C. $\dfrac{1 - \sqrt{4a}}{2}$

D. None

Answer: D

15. If the sum of a number and its reciprocal is $\dfrac{17}{4}$, then that number is..........

    A. 4 or $\dfrac{1}{4}$

    B. 4 or $\dfrac{-1}{4}$

    C. -4 or $\dfrac{1}{4}$

    D. None

Answer: A

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16. IF 3 is one root of $x^2 + kx - 24 = 0$ then

k=..........

A. 3

B. 4

C. 5

D. 6

Answer: C

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17. IF the roots of

$$kx^2 + x(k-1) + (k-1) = 0 \quad \text{are} \quad \text{equal,}$$

then k=..........

    A. 1 or $\dfrac{1}{3}$

    B. 1 or $\dfrac{-1}{3}$

    C. -1 or $\dfrac{1}{3}$

    D. -1 or $\dfrac{-1}{3}$

Answer: B

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18. The roots of $2x^2 - 3x + 5 = 0$ are

A. Rational are equal

B. Rational are not equal

C. Irrational

D. Not real

Answer: D

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19. The condition that the roots of $ax^2 + bx + c = 0$ may be in the ratio m:n is...........

A. $mnb^2 = ac(m + n)^2$

B. $mnc^2 = ab(m + n)^2$

C. $mnb^2 = 2ac(m + n)^2$

D. $mnc^2 = 2ab(m + n)^2$

Answer: A

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20. The equation whose roots are greater by 1 than those of $2x^2 + 3x + 5 = 0$.

    A. $2x^2 - x + 4 = 0$

    B. $x^2 + 5x + 6 = 0$

    C. $2x^2 + 4x + 7 = 0$

    D. $3x^2 + 4x + 6 = 0$

Answer: A

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