

Instructions: To initialise the quiz you must click on “BEGIN QUIZ.” Then check the boxes with your answers. When you finish the quiz you click on “END QUIZ” in order to see your score. Finally, click on “CORRECT” to see the right answers. This quiz has 25 questions. The use of calculators is forbidden.

Begin Quiz Answer each of the following.

1. Solve for x : $|x + 1| - 8 = -4$.

$$x = -5, x = 3 \quad x = -6, x = -2 \quad x = -12, x = 4 \quad x = 5, x = -3$$

2. Solve for x : $\frac{a}{x} - 2b = -b$.

$$x = \frac{b}{a} \quad x = \frac{3b}{a} \quad x = \frac{a}{b} \quad x = \frac{a}{3b}$$

3. Solve $\frac{x}{1-x} = y$ for x .

$$x = \frac{y}{1+y} \quad x = \frac{y}{1-y} \quad x = \frac{y}{y-1} \quad x = \frac{1-y}{y}$$

4. $\{x \in \mathbb{R} : |2x - 1| \leq 5\} =$

$$\begin{aligned} &] - 2 ; 3[\\ &] - \infty ; -2[\cup] 3 ; +\infty[\\ &] - \infty ; -2[\cup] 3 ; +\infty[\\ &[- 2 ; 3] \end{aligned}$$

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5. Find the equation of the straight line joining (5, 2) and (4, 6).

$$y = 4x - 18 \qquad y = -4x - 18 \qquad y = -4x + 22 \qquad y = 4x + 22$$

6. What is the equation of the line passing through (2, 0) and perpendicular to the line $y = -2x + 1$?

$$y = -\frac{x}{2} - 1 \qquad y = -\frac{x}{2} + 1 \qquad y = \frac{x}{2} + 1 \qquad y = \frac{x}{2} - 1$$

7. $(4 + x)^2 - (x - 3)^2 =$

$$14x + 25 \qquad 2x + 7 \qquad x + 7 \qquad 7(2x + 1)$$

8. Find the quotient: $\frac{x^3 + 9x^2 + 8x}{x + 1}$

$$x + 8 \qquad x^2 - 8x \qquad x^2 + 8x \qquad x - 8$$

9. Find the quotient: $\frac{5x^3 - 3x - 34}{x - 2}$

$$5x^2 - 10x + 17 \qquad 5x^2 - 10x - 17 \qquad 5x^2 + 10x + 17 \qquad 5x^2 + 10x - 17$$

10. The sum of two numbers is 2 and their product is 3. Find the sum of their squares.

$$-10 \qquad 10 \qquad -2 \qquad 2$$

11. Write in reduced form $\frac{x^2 + 3x}{x^3 + 27}$.

$$\frac{x}{x^2 - 3x + 9} \qquad \frac{x}{x + 3} \qquad \frac{x}{x - 3} \qquad \frac{x}{x^2 + 3x + 9}$$

12. $\frac{2}{x} + \frac{1}{x + 1} =$

$$\frac{3}{2x + 1} \qquad \frac{2x + 3}{x + 1} \qquad \frac{2x + 2}{x + 1} \qquad \frac{3x + 2}{x^2 + x}$$

13. $(x^{12})^{2/3} =$

$$x^{36} \qquad x^6 \qquad x^{18} \qquad x^8$$

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14. Simplify: $\left(\frac{1}{5}\right)^{-1} - \left(\frac{1}{2}\right)^{-1}$

-3

3

$\frac{1}{3}$

$-\frac{1}{3}$

15. Write using positive exponents: $\frac{a^{-3}b^2}{a^5b^5}$

a^8b^3

$\frac{b^3}{a^8}$

$\frac{1}{a^8b^3}$

$\frac{a^2}{b^3}$

16. $(\sqrt{2} - 2)^2 =$

$6 - \sqrt{2}$

$6 + 2\sqrt{2}$

$6 - 2\sqrt{2}$

$6 - 4\sqrt{2}$

17. $\frac{12}{\sqrt{2}} =$

$12\sqrt{2}$

$6\sqrt{2}$

$2\sqrt{2}$

$\sqrt{6}$

18. If $i^2 = -1$ then $\sqrt{-9} =$

3

$9i$

$3i$

9

19. $i^{2002} + i^{2003} =$

$1 - i$

$-1 - i$

0

$i - 1$

20. $(1 - 2i)(2 + 3i) =$

$8 - i$

$8 + i$

$8 + 7i$

$2 + i + 6i^2$

21. Solve for x : $-3(2x + 1)^2 = 6.$

$x = \frac{1}{2} \pm \frac{i\sqrt{2}}{2}$

$x = -\frac{1}{2} \pm \frac{i\sqrt{2}}{2}$

$x = -\frac{1}{2} \pm \frac{\sqrt{2}}{2}$

$x = \frac{1}{2} \pm \frac{\sqrt{2}}{2}$

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22. Solve for x : $x^2 + 8 = 0$.

$$x = \pm 4$$

$$x = \pm 4i$$

$$x = \pm i2\sqrt{2}$$

$$x = \pm 2\sqrt{2}$$

23. Solve for x : $\sqrt{x-5} = 2$.

$$x = -1$$

$$x = -3$$

$$x = -21$$

$$x = 9$$

24. Find the roots of $x^2 - 4x + 7 = 0$.

$$x = 2 \pm i\sqrt{3}$$

$$x = -2 \pm \sqrt{11}$$

$$x = 2 \pm i\sqrt{11}$$

$$x = -2 \pm i\sqrt{3}$$

25. Find the roots of $x^4 - x^2 - 20 = 0$.

$$x \in \{\pm i\sqrt{5}, \pm 2\}$$

$$x \in \{\pm\sqrt{5}, \pm 2\}$$

$$x \in \{\pm\sqrt{5}, \pm 2i\}$$

$$x \in \{\pm i\sqrt{5}, \pm 2i\}$$

End Quiz

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