

1. Factor: $x^2 - 16$

- A. $(x + 4)(x + 4)$ B. $(x - 4)(x - 4)$
C. $(x + 4)(x - 4)$ D. Can't be factored E. None of these

2. Solve for x: $(2x - 5)(x + 5) = 0$

- A. ± 5 B. -2.5 or 5 C. 2.5 or -5 D. ± 2.5 or ± 5

3. Write in scientific notation: 34050

- A. 3.405×10^3 B. 3.405×10^4
C. 34.05×10^2 D. 34.05×10^3 E. None of these

4. Solve for x: $x^2 - 64 = 225$

- A. ± 8 B. $\pm\sqrt{161}$ C. ± 15 D. ± 17 E. None of these

5. Factor: $3x^5 + 12x^4 + 9x$

- A. $3(x^5 + 4x^4 + 3x)$ B. $3x(3x^5 + 12x^4 + 9x)$
C. $3x(x^4 + 4x^3 + 3)$ D. Can't be factored E. None of these

6. Rewrite $2\sqrt{3} + 2\sqrt{5} - 3\sqrt{5} + \sqrt{3}$ in simplified radical form

- A. $6 - \sqrt{5}$ B. $6 + \sqrt{5}$ C. $5 - 6\sqrt{5}$ D. $5 + 6\sqrt{5}$ E. None of these

7. $(3x)^{-2} =$

- A. $\frac{1}{3x^2}$ B. $\frac{3}{x^2}$ C. $\frac{1}{9x^2}$ D. $\frac{1}{(3x)^2}$ E. -6x

8. Find the solutions for $2x^2 + 5x - 11 = 0$.

- a. $\frac{5 \pm \sqrt{113}}{4}$ b. $\frac{-5 \pm \sqrt{113}}{4}$ c. $\frac{5 \pm \sqrt{63}}{4}$ d. $\frac{-5 \pm \sqrt{63}}{4}$

9. Rewrite $\sqrt{48}$ in simplified radical form.

- A. $2\sqrt{3}$ B. $4\sqrt{3}$ C. $2\sqrt{12}$ D. $6\sqrt{12}$ E. None of these

10. $\frac{12x^3y^2}{4x^6y} =$

- A. $3x^2y^2$ B. $3x^3y$ C. $\frac{3y}{x^3}$ D. $\frac{y}{x}$ E. $\frac{3y^2}{x^2}$

11. Solve for x: $x^2 + 12x + 36 = 0$

- A. -6 B. 6 C. ± 6 D. No solutions E. None of these

12. Simplify: $(x^2 + 3x + 5) + (2x^2 + 4)$

- A. $2x^4 + 3x + 9$ B. $3x^2 + 3x + 9$
C. $2x^4 + 6x^3 + 14x^2 + 12x + 20$ D. $2x^4 + 3x + 20$

13. Factor: $x^2 - 9x - 8$

- A. $(x - 8)(x - 1)$ B. $(x - 8)(x + 1)$
C. $(x - 1)(x + 8)$ D. Can't be factored E. None of these

14. $(5x^5)^2 =$

- A. $10x^{10}$ B. $10x^{25}$ C. $25x^{10}$ D. $25x^{25}$ E. None of these

15. Rewrite $\sqrt{6} \cdot \sqrt{3}$ in simplified radical form

- A. $2\sqrt{3}$ B. $3\sqrt{2}$ C. $2\sqrt{9}$ D. $9\sqrt{2}$ E. None of these

16. Find the x-intercepts for the equation $y = 3x^2 - 6x + 1$

a. $(2, 0)$ and $(-2, 0)$

b. $(2\sqrt{6}, 0)$ and $(-2\sqrt{6}, 0)$

c. $(1 + 2\sqrt{6}, 0)$ and $(1 - 2\sqrt{6}, 0)$

d. $\left(\frac{3 + \sqrt{6}}{3}, 0\right)$ and $\left(\frac{3 - \sqrt{6}}{3}, 0\right)$

17. How many solutions are there to the equation $x^2 + 5x + 25 = 0$?

a. 0

b. 1

c. 2

d. 5

e. -5

18. Simplify: $(x - 5)(x^2 - 3x + 4)$

A. $x^3 - 8x^2 + 11x - 20$

B. $x^3 - 8x^2 - 11x - 20$

C. $x^3 - 8x^2 + 19x - 20$

D. $x^3 + 2x^2 + 19x - 20$

E. None of these

19. Solve for x: $5x^2 - 5 = 0$

a. ± 1

b. ± 5

c. $\pm\sqrt{5}$

d. No solutions

e. None of these

20. Solve for x: $x^2 + 9x = 0$

A. 0 or -9

B. ± 3

C. ± 9

D. No solutions

Answers:

1. C 2. C 3. B 4. D 5. C 6. E $(3\sqrt{3} - \sqrt{5})$ 7. C 8. B 9. B 10. C 11. A 12. B

13. D (No integers multiply to -8 and add to -9) 14. C 15. B 16. D $\frac{6 \pm \sqrt{24}}{6} = \frac{6 \pm 2\sqrt{6}}{6} = \frac{3 \pm \sqrt{6}}{3}$ 17. A ($d < 0$)

18. B 19. A 20. A