

Algebra 1

Name _____

Unit 8 Practice Test1. Which of the following is a factor of $3x^2 - x - 4$?

A. $(x + 4)$ B. $(x + 1)$

C. $(3x + 4)$ D. $(x - 3)$

2. The polynomial $x^2 + 11x + 24$ is factorable and one factor is $(x + 3)$. What is the other factor?

A. $(x - 6)$ B. $(x + 12)$

C. $(x + 8)$ D. $(x - 8)$

3. Melissa found the sum of $5x^2 + x + 1$ and $6x^3 + 5 + 7x$ to be $11x^2 + 6x + 8$. Explain in words the error Melissa made, and then correctly find the sum.

4. Write an example of a binomial with a leading coefficient of 3 and a degree of 5.

Simplify:

5. $(2a^2 + 4b^2 - 3) + (3a + 6b^2 + 4b)$

6. $(5x^4 + 5x^6 - 5) + (9x^6 + 7 - 3x^4)$

7. $(3z^3 + 2z^2 + 7) - (2z^3 - 3z^2 - 6)$

8. $(2x^2 - 7x) - (-4x^2 + 8) + (5x^3 - 4)$

9. $20x(3 - 2x)$

10. $3x^2(2x^2 - 5x - 3)$

11. $(x + 3)(x + 4)$

12. $(x + 9)(x - 9)$

13. $(x + 7)^2$

14. $(2x + 4)(2x - 4)$

Factor:

15. $7x^2 - 35x$

16. $-x^3 - 5x^2 + 8x + 40$

17. $2x^3 + 4x^2 - 6x - 12$

18. $x^2 - x - 12$

19. $x^2 - 144$

20. $x^2 - 64y^{10}$

21. $2x^2 + 16x + 32$

22. $-x^2 - 7x + 8$

23. $4x^2 - 3x - 10$

24. $x^2 + 12xy + 36y^2$

25. $y^3 + 12y^2 - 28y$

26. $6a^2 - 24$

Solve.

27. $x^2 + 11x = -30$

28. $4x^3 + 14x^2 + 12x = 0$

29. $6x^2 - 42x = 0$

30. $4x^2 - 29x + 7 = 0$

31. $x^2 + 8x + 16 = 0$

32. $9x^2 = 25$

33. $x^2 - 20 = x$

34. $3x^2 + 2x - 8 = 0$

35) The polynomial $x^2 + 11x + 30$ is factorable. One factor is $(x + 6)$. What is the other factor?

A. $(x + 1)$

C. $(x - 5)$

B. $(x + 3)$

D. $(x + 5)$

36) Factor: $-2x^3 + 6x^2 - 10x + 30$