

Chapter 9 Practice Test

Short Answer

1. Name the expression based on its degree and number of terms.

$$6x^3 - 9x + 3$$

3rd degree trinomial or Cubic trinomial

2. Write the polynomial in standard form. Then name the polynomial based on its degree and number of terms.

$$2 - 11x^2 - 8x + 6x^2$$

$$-5x^2 - 8x + 2$$

2nd degree trinomial or quadratic trinomial

3. Simplify the sum.

$$(4u^3 + 4u^2 + 2) + (6u^3 - 2u + 8)$$

$$10u^3 + 4u^2 - 2u + 10$$

Simplify the difference.

4. $(4w^2 - 4w - 8) - (2w^2 + 3w - 6)$

$$2w^2 - 7w - 2$$

5. Find the GCF of the terms of the polynomial.

$$8x^6 + 32x^3$$

$$8x^3$$

$$8x^3(x^3 + 4)$$

Factor the polynomial with GCF factoring.

6. $40w^{11} + 16w^6$

$$8w^6(5w^5 + 2)$$

7. $2x^3 + 8x^2 + 6x$

$$2x(x^2 + 4x + 3)$$

8. Factor the following expression.

$$w^{18} - 9w^9y^5 + 14y^{10}$$

$$(w^9 - 7y^5)(w^9 - 2y^5)$$

$$\begin{array}{r} \text{Factors of } 14 \\ -7 \quad -2 \\ 14 \quad 1 \end{array}$$

9. Factor the following expression.

$$198q^3r^2 - 184q^2r^2 + 18qr^2$$

$$2qr^2(99q^2 - 92qr + 9r^2)$$

$$(\quad)(\quad)$$

Simplify the product.

10. $8x^2(4x^2 + 4y^6)$

$$32x^4 + 32x^2y^6$$

11. $8p(-3p^2 + 6p - 2)$

$$-24p^3 + 48p^2 - 16p$$

12. $5a^2(3a^4 + 3b)$

$$15a^6 + 15a^2b$$

13. $7a^3(5a^6 - 2b^3)$

$$35a^9 - 14a^3b^3$$

Simplify the product using FOIL.

14. $(3x - 7)(3x - 5)$

$$9x^2 - 15x - 21x + 35$$

$$9x^2 - 36x + 35$$

Find the product.

15. $(2n + 2)(2n - 2)$

$$4n^2 - 4n + 4n - 4$$

$$4n^2 - 4$$

Complete.

16. $y^2 + 15y + 56 = (y + 7)(y + \blacksquare)$

$$8$$

17. Find the missing coefficient.

$$(5d - 7)(5d - 6) = 25d^2 + \blacksquare d + 42$$

$$-30d - 35d$$

$$-65$$

Find the square.

18. $(8m + 7)^2 = (8m + 7)(8m + 7)$

$$64m^2 + 112m + 49$$

19. Simplify.

$$(2k + 3)(2k^2 - 4k - 3)$$

$$4k^3 - 8k^2 - 6k + 6k^2 - 12k - 9$$

$$4k^3 - 2k^2 - 18k - 9$$

Factor the expression.

20. $49b^2 - 36$

$49b^2 + 0b - 36$

$(b-6)(b+6)$

Factors of -36

$36 \quad -1$

$6 \quad -6$

$6 + -6 = 0$

21. $k^2 - 16h^2$

$(k-4h)(k+4h)$

skip

22. $4x^2 - 81y^2$

$(2x-9y)(2x+9y)$

23. $r^2 - 49$

$(r-7)(r+7)$

24. $49b^2 + 70b + 25$

$(7b+5)(7b+5)$

25. $d^2 - 14d + 49$

$(d-7)(d-7)$

26. $w^2 + 18w + 77$

$(w+7)(w+11)$

27. $x^2 - x - 42$

$(x-7)(x+6)$

28. $k^2 + kf - 2f^2$

$(k+2f)(k-f)$

29. $15x^2 - 16xy + 4y^2$

$$(5x - 2y)(3x - 2y)$$

30. $12d^2 + 4d - 1$

$$(2d + 1)(6d - 1)$$

31. $6x^2 + 5x + 1$

~~$$(2x + 1)(3x + 1)$$~~

32. $20x^2 + 22x - 12$

$$2(10x^2 + 11x - 6) \rightarrow 2(5x - 2)(2x + 3)$$

Solve the equation using the zero-product property.

33. $(4x + 8)(4x - 4) = 0$

$$x = -2 \text{ or } 1$$

$$4x + 8 = 0$$

$$4x = -8$$

$$x = -2$$

$$4x - 4 = 0$$

$$4x = 4$$

$$x = 1$$

34. $3n(9n + 2) = 0$

$$n = 0 \text{ or } -\frac{2}{9}$$

$$3n = 0$$

$$n = 0$$

$$9n + 2 = 0$$

$$9n = -2$$

$$n = -\frac{2}{9}$$

Solve the equation by factoring.

35. $z^2 - 2z - 15 = 0$

$$(z - 5)(z + 3) = 0$$

$$z - 5 = 0$$

$$z = 5$$

$$z + 3 = 0$$

$$z = -3$$

36. $2z^2 + 8z + 6 = 0$

$$2(z^2 + 4z + 3) = 0$$

$$2(z + 3)(z + 1) = 0$$

$$z + 3 = 0$$

$$z = -3$$

$$z + 1 = 0$$

$$z = -1$$

37. $c^2 - 2c = 0$

$$c(c - 2) = 0$$

$$c = 0$$

$$\text{or } c = 2$$

38. $15 = 8x^2 - 14x$

$$8x^2 - 14x - 15 = 0$$

$$(2x - 5)(4x + 3) = 0$$

$$2x - 5 = 0$$

$$2x = 5$$

$$x = \frac{5}{2}$$

$$4x + 3 = 0$$

$$4x = -3$$

$$\text{or } x = -\frac{3}{4}$$