

Example 1

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Find the degree of each monomial.

1. $4x^1$

2. $7c^3$

3. -16

4. $6y^2w^8$

5. $8ab^3$

6. 6

7. $-9x^4$

8. 11

Example 2

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Name each expression based on its degree and number of terms. 9–11. See left.

9. $5x^2 - 2x + 3$

10. $\frac{3}{4}z + 5$

11. $7a^3 + 4a - 12$

12. $\frac{3}{x} + 5$

13. -15

14. $w^2 + 2$

not a polynomial

constant monomial

quadratic binomial

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms. 15–20. See margin p. 458.

15. $4x - 3x^2$

16. $4x + 9$

17. $c^2 - 2 + 4c$

18. $9z^2 - 11z^2 + 5z - 5$

19. $y - 7y^3 + 15y^8$

20. $-10 + 4q^4 - 8q + 3q^2$

Example 3

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Simplify each sum. 25–27. See margin.

21. $\frac{5m^2 + 98m^2 + 15}{+ 3m^2 + 6}$

22. $\frac{3k - 8}{+ 7k + 12}$

23. $\frac{w^2 + w - 4}{+ 7w^2 - 4w + 8}$

24. $(8x^2 + 1) + (12x^2 + 6)$

25. $(g^4 + 4g) + (9g^4 + 7g)$

26. $(a^2 + a + 1) + (5a^2 - 8a + 20)$

27. $(7y^3 - 3y^2 + 4y) + (8y^4 + 3y^2)$

Example 4

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Simplify each difference. 28–32. See margin.

28. $\frac{6c - 5}{- (4c + 9)}$

29. $\frac{2b + 6}{- (b + 5)}$

30. $\frac{7h^2 + 4h - 8}{- (3h^2 - 2h + 10)}$

31. $(17n^4 + 2n^3) - (10n^4 + n^3)$

32. $(24x^5 + 12x) - (9x^5 + 11x)$

33. $(6w^2 - 3w + 1) - (w^2 + w - 9)$

34. $(-5x^4 + x^2) - (x^3 + 8x^2 - x)$

Your Skills

Simplify. Write each answer in standard form. 35–38. See left.

35. $(7y^2 - 3y + 4y) + (8y^2 + 3y^2 + 4y)$

36. $(2x^3 - 5x^2 - 1) - (8x^3 + 3 - 8x^2)$

37. $(-7z^3 + 3z - 1) - (-6z^2 + z + 4)$

38. $(7a^3 - a + 3a^2) + (8a^2 - 3a - 4)$

Geometry

Find the perimeter of each figure.

39. $28c - 16$

$9c - 10$

$5c + 2$

40. $39x - 7$

$9x$

$5x + 1$

$8x - 2$

$17x - 6$

Help?

the of a figure is all the sides re.