

7.1**Practice A**

In Exercises 1–3, find the degree of the polynomial.

1. $7n^3$

2. $\frac{1}{3}x^5$

3. w^2y^5

In Exercises 4–6, write the polynomial in standard form. Identify the degree and leading coefficient of the polynomial. Then classify the polynomial by the number of terms.

4. $5h - 4h^3 - 2$

5. $10 + 4p^3$

6. $6v^7$

7. The expression $-16t^2 + 20t + 100$ represents the height of an object t seconds after it is dropped from a height of 100 feet. Why is this expression a trinomial? What is its degree?

In Exercises 8–11, find the sum.

8. $(7t + 6) + (-4t - 2)$

9. $(-12v + 3) + (8v - 7)$

10. $(3j^2 - 7j + 1) + (-6j^2 - 4j + 9)$

11. $(2w^2 - 7w + 3) + (2w^2 + 8w)$

In Exercises 12–15, find the difference.

12. $(p - 5) - (4p - 7)$

13. $(8w + 3) - (9w + 6)$

14. $(3y^2 - 6y + 9) - (6y^2 - 7y - 2)$

15. $(5b^2 - 6b - 9) - (-2b^2 + 8b - 1)$

16. Describe and correct the error in finding the sum.

$$\begin{aligned} \times (x^3 - 8x + 2) + (3x^3 + 7x + 6) &= x^3 - 8x + 2 + 3x^3 + 7x + 6 \\ &= (x^3 + 3x^3) - (8x + 7x) + (2 + 6) \\ &= 4x^3 - 15x + 8 \end{aligned}$$

In Exercises 17 and 18, find the sum or difference.

17. $(3p^2 - 6pq + 7q^2) - (p^2 - 5pq + 9q^2)$

18. $(x^2 - 4xy + 9y^2) + (-8x^2 + 6xy - y^2)$

19. Your friend says that when subtracting polynomials, the order in which you subtract does not matter. Is your friend correct? Explain.

7.1 Practice B

In Exercises 1–3, find the degree of the polynomial.

1. $-3.25n^8$

2. $\frac{1}{5}x^4yz^2$

3. uv^3w^9

In Exercises 4–6, write the polynomial in standard form. Identify the degree and leading coefficient of the polynomial. Then classify the polynomial by the number of terms.

4. $3t - 8t^2 + 10t^5$

5. $\frac{2}{9}n^2 - \pi n + 3n^4$

6. $\sqrt{14}p^5$

7. The monthly profit for a small company is represented by $250x^5 - 42x^2 + 112x$, where x is the number of beds sold. Classify the polynomial by the number of terms. What is its degree?

In Exercises 8–11, find the sum.

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

9. $(8y^2 - 2y + 4) + (5y^2 - 7y)$

10. $(3k - 5k^3 + 9) + (8k^3 - 4k + 8)$

11. $(3q^2 - 7q - 6) + (2q^2 - 5q^3 + 8q)$

In Exercises 12–15, find the difference.

12. $(t^3 - 5t^2 - 7) - (t - 11)$

13. $(-w - 13) - (-3w^3 + w^2 + 6w)$

14. $(x^4 - x^2 + 9) - (13 - 6x^2 + 8x)$

15. $(3g - 5g^3 + 6g^2) - (12g^3 + 9g - 10)$

16. The number of economy-size cars rented in w weeks is represented by $152 + 3w$. The number of full-size cars rented in w weeks is represented by $99 + 2w$. Write a polynomial that represents how many more economy cars are rented in w weeks than full-size cars.

In Exercises 17 and 18, find the sum or difference.

17. $(g^2 - 9h^2) + (g^2 - 15gh + 8h^2)$

18. $(-m^2 - 5mn) - (m^2 + 3mn - 9n^2)$

19. The polynomial $-16t^2 + v_0t + s_0$ represents the height (in feet) of an object, where v_0 is the initial vertical velocity (in feet per second), s_0 is the initial height of the object (in feet), and t is the time (in seconds). Write a polynomial that represents the height of an object that has initial velocity 25 feet per second and initial height 4 feet. Then find the height of the object after 1 second.