

Name _____

Date _____

Additional Exercises 6.1
Form I
Adding and Subtracting Polynomials

Identify the polynomial as a monomial, binomial, or trinomial. Give the degree of the polynomial.

1. $18x$ 1. _____

2. $-6y^4 - 3y^3 - 1$ 2. _____

3. $9x^5 + 8x^4 + 6x^3$ 3. _____

4. -15 4. _____

Add the polynomials.

5. $(2y^5 - 7y^3) + (3y^5 - 8y^3)$ 5. _____

6. $(8y^7 + 6y^6 + 9y) + (4y^7 + 2y^6 + 4y)$ 6. _____

7.
$$\begin{array}{r} 5y^6 - 3y^3 - 5 \\ 9y^6 + 9y^3 - 2 \\ \hline \end{array}$$
 7. _____

8.
$$\begin{array}{r} 6y^5 + 9y^3 \\ 6y^5 - 7y^3 \\ \hline \end{array}$$
 8. _____

9.
$$\begin{array}{r} 12y^4 - 8y^3 + 3y^2 + y \\ 9y^4 + 6y^3 - 2y^2 - 2y \\ \hline \end{array}$$
 9. _____

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Subtract the polynomials.

10. $(-8x + 12) - (4x + 6)$ 10. _____

11. $(2y^3 + 6y^2) - (-5y^3 + 19y^2)$ 11. _____

12. $(4x^5 - 16x^4 + 17) - (8x^5 - 5x^4 + 20)$ 12. _____

13.
$$\begin{array}{r} 3x^4 - 4x^2 \\ -(15x^4 - 7x^2) \\ \hline \end{array}$$
 13. _____

14.
$$\begin{array}{r} 5y^5 - 18y^3 + 20 \\ -(9y^5 - 13y^3 - 15) \\ \hline \end{array}$$
 14. _____

15. If the cost, y , for manufacturing x units of a certain product is given by $y = x^2 - 60x + 4000$, find the cost of manufacturing 90 units. 15. _____

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Additional Exercises 6.1
Form II
Adding and Subtracting Polynomials

Identify the polynomial as a monomial, binomial, or trinomial. Give the degree of the polynomial.

1. $8x^3 - 6$ 1. _____

2. 2 2. _____

3. $5x^6 - 3x^4 + 9$ 3. _____

4. $4x^2 + 5x$ 4. _____

Add the polynomials.

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

6. $(7x^5 - 4x^3 + 2) + (-3x^5 + 2x - 1)$ 6. _____

7.
$$\begin{array}{r} 8x^4 - 3x^3 - 4 \\ -4x^4 + 2x^3 - 5x \\ \hline \end{array}$$
 7. _____

8. $(-3x^5 + 4x^4 + 7x^3) + (2x^4 - 6x^3 + 1)$ 8. _____

9.
$$\begin{array}{r} 10x^3 - 5x^2 + 7x - 3 \\ 2x^3 + 4x^2 - 6x + 5 \\ \hline \end{array}$$
 9. _____

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Subtract the polynomials.

10. $(-4x^2 + 5x - 3) - (3x + 1)$

10. _____

11. $(5x^5 + 3x^2 - 2x + 1) - (4x^2 + 7x - 4)$

11. _____

12. $(6x^4 - 3x - 7) - (2x^3 + 5x^2 - x)$

12. _____

13.
$$\begin{array}{r} 7x^3 - 2x^2 \\ -(21x^3 - x^2) \\ \hline \end{array}$$

13. _____

14.
$$\begin{array}{r} 8x^4 + 6x^3 - 2x^2 \\ -(3x^4 - x^3 + 7x^2) \\ \hline \end{array}$$

14. _____

15. The force in newtons needed to stretch a certain spring x centimeters from its resting position is given by the polynomial function $y = 10x^2$ where 10 is the spring constant. Find the force needed to stretch the spring 6 centimeters.

15. _____

Additional Exercises 6.1
Form III
Adding and Subtracting Polynomials

Identify the polynomial as a monomial, binomial, or trinomial. Give the degree of the polynomial.

1. $-12x^9 - 18x^7$ 1. _____

2. $4x^3 - 2x^2 + 5x$ 2. _____

3. 11 3. _____

4. $12x^5 - 18x + 11$ 4. _____

Add the polynomials.

5. $\left(\frac{1}{4}x^3 + \frac{2}{7}x^2 - \frac{1}{3}x\right) + \left(-\frac{3}{4}x^3 + \frac{1}{3}x + \frac{7}{9}\right)$ 5. _____

6. $\left(\frac{5}{7}x^3 - \frac{2}{3}x^2 + \frac{1}{5}\right) + \left(-\frac{4}{7}x^3 + x^2 - \frac{3}{4}x\right)$ 6. _____

7. $\left(-\frac{3}{5}x^2 + \frac{1}{2}x + \frac{4}{5}\right) + \left(\frac{4}{5}x^2 + \frac{1}{4}x + \frac{3}{4}\right)$ 7. _____

8.
$$\frac{\frac{3}{7}x^2 - \frac{1}{4}x + \frac{3}{5}}{\frac{2}{7}x^2 - \frac{3}{4}x + \frac{1}{5}}$$
 8. _____

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$$9. \quad \begin{array}{r} \frac{4}{5}x^2 - \frac{2}{5}x - \frac{2}{5} \\ -\frac{1}{5}x^2 + \frac{2}{3}x - \frac{3}{5} \\ \hline \end{array}$$

9. _____

Subtract the polynomials.

$$10. \quad (4x^5 - 16x^4 + 17) - (-5x^4 + 2x^3 - 8)$$

10. _____

$$11. \quad \left(\frac{3}{8}x^4 + \frac{2}{5}x^3 - \frac{3}{7}\right) - \left(\frac{1}{8}x^4 - \frac{1}{5}x^3 - \frac{2}{7}\right)$$

11. _____

$$12. \quad \left(\frac{3}{4}x^3 + \frac{2}{3}x^2 - \frac{2}{5}x\right) - \left(\frac{1}{4}x^3 + \frac{1}{3}x^2 - \frac{1}{5}x + \frac{3}{8}\right)$$

12. _____

$$13. \quad \begin{array}{r} \frac{9}{8}x^3 + \frac{2}{5}x^2 - 8 \\ -\left(\frac{1}{8}x^3 - \frac{2}{5}x^2 - x\right) \\ \hline \end{array}$$

13. _____

$$14. \quad \begin{array}{r} 7y^6 + 7y^4 + 17y \\ -(5y^6 + 16y^4 + 19y) \\ \hline \end{array}$$

14. _____

15. The number of fires in a county for the years 1994-1998, where 1 represents 1994, 2 represents 1995, and so on can be approximated using the third-degree polynomial $y = -0.53x^3 + 0.55x^2 + 56.34x + 3126.4$. Use this function to predict the number of fires in 2003.

15. _____