

Adding and Subtracting Polynomials Assignment

Simplify the following polynomials

1. $5y - 5 + 2y + 7$

2. $7m + 5n + 5m - n$

3. $9x^2 - 3x + 2 + x^2 - 4$

4. $x^2 + 3xy + y^2 + 2x^2 + 5xy - y^2$

5. $1 - 6a + 5 - 4a + 3a^2$

6. $2a^3 - 3a^2 - 5a + a^2 + 5a + 10$

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

8. $7a^2 + 3a - 2 - (2a + 16)$

Perform the Indicated operation

9. add $5a - 3b + 6$;
 $-6a + 2b - 12$

10. subtract $2x + 3xy - 4y$ from
 $3x - xy + 5y$

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11. add $xy - 2x^2y + xy^2 + 3;$
 $-2xy^2 + 5xy - 6x + 4x^2y$

12. subtract $x^3y^2 - 3xy^3 + 2y^2 + 5$ from
 $5x^3y^2 + 4xy^3 - 2x - 5y^2$

Simplify the following remove the grouping symbols

13. $\{-3x - [2x - 3 - (6x + 3) - 9] + 17\} + 2$

14. $[2x + y - (4 - 2y + 4x)] - (6x - 5y + 4)$

15. $\{-[2x + 5y + 3 - (3x - 7y + 9) - 19]\} - 9$

16. $-\{2a^3 - [-3a^2 - (-5a)] + a^2 + (-5a + 10)\}$

17. $\{1 - [-6a + (-5 - 4a)] + 3a^2\} - 10$

18. $-\{9x^2 - [-3x + (-2 + x^2)] - 4\}$

19. $-\{-2x - y - [3x - (4x + y - 3) - y] - 7\}$

20. $-\{3x + 4y - (7x - 8)\} - \{3x - [-4y - (x - 5)]\}$

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Answer:

Simplify the following polynomials

1. $5y - 5 + 2y + 7$

Answer:

$7y + 2$

3. $9x^2 - 3x + 2 + x^2 - 4$

Answer:

$10x^2 - 3x - 2$

5. $1 - 6a + 5 - 4a + 3a^2$

Answer:

$3a^2 - 10a + 6$

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

Answer:

$x^3 - x^2 - 9$

Perform the Indicated operation

9. add $5a - 3b + 6$;

$-6a + 2b - 12$

Answer:

$$\begin{array}{r} 5a - 3b + 6 \\ + -6a + 2b - 12 \\ \hline -a - b - 6 \end{array}$$

11. add $xy - 2x^2y + xy^2 + 3$;

$-2xy^2 + 5xy - 6x + 4x^2y$

Answer:

$$\begin{array}{r} xy - 2x^2y + xy^2 + 3 \\ + 5xy + 4x^2y - 2xy^2 - 6x + 3 \\ \hline 6xy + 2x^2y - xy^2 - 6x + 6 \end{array}$$

Simplify the following remove the grouping symbols

13. $\{-3x - [2x - 3 - (6x + 3) - 9] + 17\} + 2$

$\{-3x - [2x - 3 - 6x - 3 - 9] + 17\} + 2$

$\{-3x - [-4x - 15] + 17\} + 2$

$\{-3x + 4x + 15 + 17\} + 2$

$\{x + 32\} + 2$

$x + 34$

2. $7m + 5n + 5m - n$

Answer:

$12m + 4n$

4. $x^2 + 3xy + y^2 + 2x^2 + 5xy - y^2$

Answer:

$3x^2 + 8xy$

6. $2a^3 - 3a^2 - 5a + a^2 + 5a + 10$

Answer:

$2a^3 - 2a^2 + 10$

8. $7a^2 + 3a - 2 - (2a + 16)$

Answer:

$7a^2 + a - 18$

10. subtract $2x + 3xy - 4y$ from

$3x - xy + 5y$

Answer:

$$\begin{array}{r} 3x - xy + 5y \\ (-) 2x + 3xy - 4y \\ \hline 3x - xy + 5y \\ (+) -2x - 3xy + 4y \\ \hline x - 4xy + 9y \end{array}$$

12. subtract $x^3y^2 - 3xy^3 + 2y^2 + 5$ from

$5x^3y^2 + 4xy^3 - 2x - 5y^2$

Answer:

$$\begin{array}{r} 5x^3y^2 + 4xy^3 - 5y^2 - 2x \\ (-) x^3y^2 - 3xy^3 + 2y^2 + 5 \\ \hline 5x^3y^2 + 4xy^3 - 5y^2 - 2x \\ (+) -x^3y^2 + 3xy^3 - 2y^2 - 5 \\ \hline 4x^3y^2 + 7xy^3 - 7y^2 - 2x - 5 \end{array}$$

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$$\begin{aligned}
 15. & \{ -[2x + 5y + 3 - (3x - 7y + 9) - 19] \} - 9 \\
 & \{ -[2x + 5y + 3 - 3x + 7y - 9 - 19] \} - 9 \\
 & \{ -[-x + 12y - 25] \} - 9 \\
 & x - 12y + 25 - 9 \\
 & \mathbf{x - 12y + 16}
 \end{aligned}$$

$$\begin{aligned}
 17. & \{ 1 - [-6a + (-5 - 4a)] + 3a^2 \} - 10 \\
 & \{ 1 - [-6a - 5 - 4a] + 3a^2 \} - 10 \\
 & \{ 1 - [-10a - 5] + 3a^2 \} - 10 \\
 & \{ 1 + 10a + 5 + 3a^2 \} - 10 \\
 & \{ 6 + 10a + 3a^2 \} - 10 \\
 & 6 + 10a + 3a^2 - 10 \\
 & \mathbf{3a^2 + 10a - 4}
 \end{aligned}$$

$$\begin{aligned}
 19. & -\{ -2x - y - [3x - (4x + y - 3) - y] - 7 \} \\
 & -\{ -2x - y - [3x - 4x - y + 3 - y] - 7 \} \\
 & -\{ -2x - y - [-x - 2y + 3] - 7 \} \\
 & -\{ -2x - y + x + 2y - 3 - 7 \} \\
 & -\{ -x + y - 10 \} \\
 & \mathbf{x - y + 10}
 \end{aligned}$$

$$\begin{aligned}
 16. & -\{ 2a^3 - [-3a^2 - (-5a)] + a^2 + (-5a + 10) \} \\
 & -\{ 2a^3 + 3a^2 - 5a + a^2 - 5a + 10 \} \\
 & -\{ 2a^3 + 4a^2 - 10a + 10 \} \\
 & \mathbf{-2a^3 - 4a^2 + 10a - 10}
 \end{aligned}$$

$$\begin{aligned}
 18. & -\{ 9x^2 - [-3x + (-2 + x^2)] - 4 \} \\
 & -\{ 9x^2 + 3x + 2 - x^2 - 4 \} \\
 & -\{ 8x^2 + 3x - 2 \} \\
 & \mathbf{-8x^2 - 3x + 2}
 \end{aligned}$$

$$\begin{aligned}
 20. & -\{ 3x + 4y - (7x - 8) \} - \{ 3x - [-4y - (x - 5)] \} \\
 & -\{ 3x + 4y - 7x + 8 \} - \{ 3x - [-4y - x + 5] \} \\
 & -\{ 4y - 4x + 8 \} - \{ 3x + 4y + x - 5 \} \\
 & -4y + 4x - 8 - \{ 4x + 4y - 5 \} \\
 & -4y + 4x - 8 - 4x - 4y + 5 \\
 & \mathbf{-8y - 3}
 \end{aligned}$$