

Definitions, Addition

EXAMPLE

Add $5x^3 - 9x^2y + 7xy^2 - 2x + 15$ and $4x^2y^2 - x^2y - 8xy^2 + 5x - 10$.

Group like terms, then add.

$$\begin{array}{r}
 5x^3 \qquad \qquad \qquad - 9x^2y \quad + 7xy^2 \quad - 2x \quad + 15 \\
 \qquad \qquad \qquad + 4x^2y^2 \quad - \quad x^2y \quad - 8xy^2 \quad + 5x \quad - 10 \\
 \hline
 5x^3 \quad + 4x^2y^2 \quad - 10x^2y \quad - \quad xy^2 \quad + 3x \quad + 5
 \end{array}$$

Directions Add the expressions.

1. $x^4y^2 + 6x^2y - 3xy^2$ and $3x^3y^2 - 8x^2y + xy^2 - 10x$

2. $3x^3y^2 + 8x^2y - 12xy + 16x - 10$ and $4x^3y^2 - 7x^2y + 6xy + 4y^2 + 4$

3. $9x^4y^3 + 3x^3y^2 - 7x^2y - 6y^3 + 6y^2 - 18$ and $12x^3y^2 - 14x^2y + 7y^2 - 11$

4. $3x^4y^2 + 6x^3y^2 - 7x^2y^2 - 10xy^2 - 14y + 17$ and $-7x^3y^2 + 7x^2y^2 + 19xy^2 - y - 4$

5. $10x^4y^3 - 7x^3y^3 + 16x^2y - 8xy^3 - 7xy + 2$ and $4x^3y^3 - 8x^2y - 8xy^3 - 6xy - 12$

Directions: Find the difference.

6. Subtract $3x^3y^2 - 8x^2y + xy^2 - 10x$ from $x^4y^2 + 6x^2y - 3xy^2$.

7. Subtract $4x^3y^2 - 7x^2y + 6xy + 4y^2 + 4$ from $3x^3y^2 + 8x^2y - 12xy + 16x - 10$.

8. Subtract $12x^3y^2 - 14x^2y + 7y^2 - 11$ from $9x^4y^3 + 3x^3y^2 - 7x^2y - 6y^3 + 6y^2 - 18$.

9. Subtract $-7x^3y^2 + 7x^2y^2 + 19xy^2 - y - 4$ from $3x^4y^2 + 6x^3y^2 - 7x^2y^2 - 10xy^2 - 14y + 17$.

10. Subtract $4x^3y^3 - 8x^2y - 8xy^3 - 6xy - 12$ from $10x^4y^3 - 7x^3y^3 + 16x^2y - 8xy^3 - 7xy + 2$.
