



3-2 Additional Practice

Adding, Subtracting and Multiplying Polynomials

Add or subtract the polynomials.

1. $(4x^3 + 2x + 2x^2 - 8) + (2x^3 + x^2 + 9)$

$$6x^3 + 3x^2 + 2x + 1$$

2. $(y^3 + 6x^2y^2 - 4xy - 8) - (2y^3 - 7x^2y^2 - 2xy - y + 8)$

$$-y^3 + 13x^2y^2 - 2xy - y - 16$$

3. $(9a^3b + 6ab - 4) - (10a^3b - 6a^2b^2 - 6)$

$$-a^3b + 6a^2b^2 + 6ab + 2$$

Multiply the polynomials.

4. $-2cd(5c^2 - 5cd - d^2)$

$$-10c^3d + 10c^2d^2 + 2cd^3$$

5. $(-2b + 4)(5b^2 - 4b + 2)$

$$-10b^3 + 28b^2 - 20b + 8$$

Are the following polynomial sets open or closed?

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

Open

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

Open

8. $(5b - 3c)(7b - 3c)$

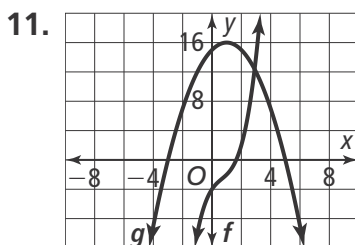
Open

Write a Polynomial Function.

9. Write and simplify a polynomial expression to find the area of 4 circles. Each circle has a radius of $(4a - 6)$. $(64a^2 - 192a + 144)\pi$

10. If the length of a rectangle in terms of x centimeters is $5x^2 + 4x - 4$ and its width is $3x^2 + 2x + 6$ centimeters, what is the perimeter of the rectangle? Simplify. $4(4x^2 + 3x + 1)$

Compare the maximum values and the end behavior of the functions of f and g .



Maximum
value:

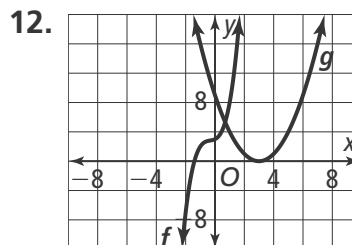
$$f(x) = 16$$

$$g(x) = \infty$$

End
behavior:

$$f(x) = x \rightarrow \infty; y \rightarrow -\infty;$$
$$x \rightarrow -\infty; y \rightarrow -\infty;$$

$$g(x) \rightarrow \infty;$$
$$g(x) \rightarrow -\infty$$



Maximum
value:

$$f(x) = \infty$$

$$g(x) = \infty$$

End behavior:

$$f(x) = x \rightarrow \infty;$$
$$y \rightarrow \infty; x \rightarrow -\infty;$$
$$y \rightarrow -\infty;$$

$$g(x) \rightarrow \infty; g(x) \rightarrow -\infty$$