

5-3 Practice

Polynomial Functions

Write each expression in standard order. State the degree and leading coefficient of each polynomial in one variable.

1. $-12 - 8x^2 + 5x - 21x^7$

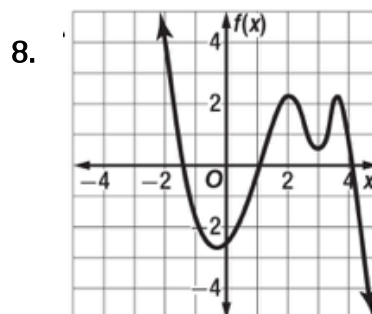
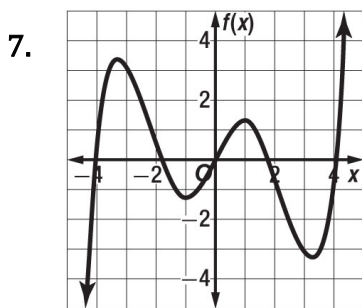
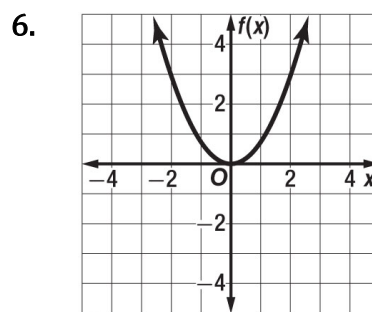
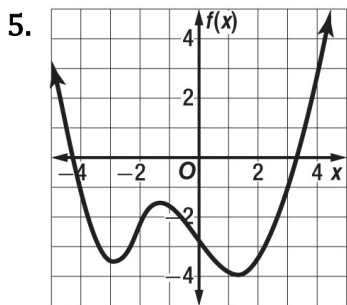
2. $7x^4 + 3x^7 - 2x^8 + 7$

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

4. $\frac{1}{5}a^3 - \frac{3}{5}a^2 + \frac{4}{5}a$

For each graph,

- a. determine whether it represents an odd-degree or an even-degree function,
- b. describe the end behavior,
- c. determine whether the leading coefficient is positive or negative, and
- d. state the number of real zeroes.



For each polynomial function,

- determine whether it represents an odd-degree or an even-degree function,
- determine whether the leading coefficient is positive or negative, and
- describe the end behavior.

9. $f(x) = x^3 + 3x^2 - 4x$

Degree:

Leading coefficient:

Ending behavior:

10. $f(x) = -2x^2 + 8x + 5$

Degree:

Leading coefficient:

Ending behavior:

11. $f(x) = x^4 - 3x^2 + 6x$

Degree:

Leading coefficient:

Ending behavior:

12. $f(x) = -4x^3 - 4x^2 + 8$

Degree:

Leading coefficient:

Ending behavior:

Find $p(-2)$ and $p(3)$ for each function.

13. $p(x) = x^3 - x^5$

14. $p(x) = -7x^2 + 5x + 9$

If $p(x) = 3x^2 - 4$ and $r(x) = 2x^2 - 5x + 1$, find each value.

15. $p(8a)$

16. $r(x + 2)$

17. WIND CHILL The function $C(w) = 0.013w^2 - w - 7$ estimates the wind chill temperature $C(w)$ at 0°F for wind speeds w from 5 to 30 miles per hour. Estimate the wind chill temperature at 0°F if the wind speed is 20 miles per hour.