

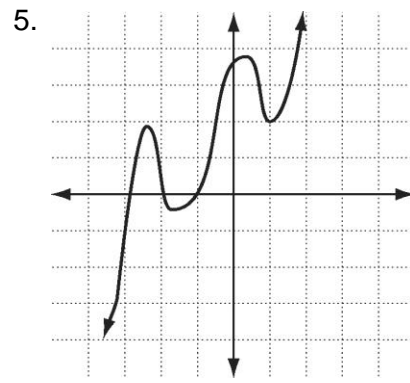
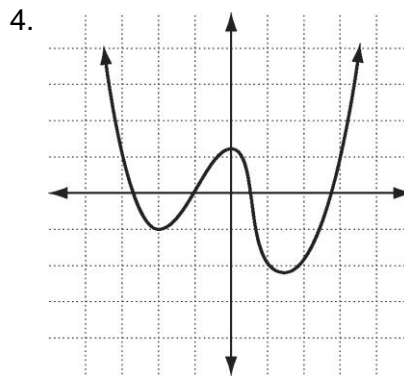
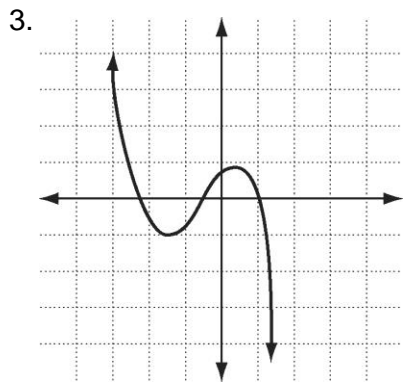
Algebra 2 Unit 5 Review #2

Identify the leading coefficient, degree, maximum turning points, and end behavior.

1. $R(x) = -6x^4 + 4x^3 - x^2 + 1$

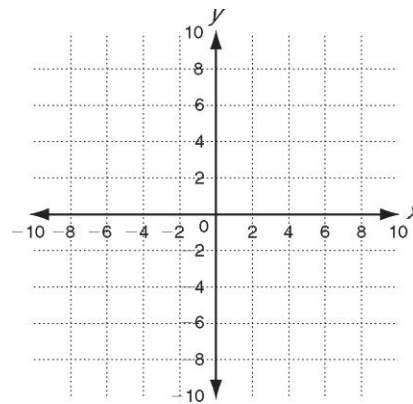
2. $Q(x) = 12 + 8x - 16x^3 - x^2$

Identify whether the function graphed has an odd or even degree and a positive or negative leading coefficient.



Graph the function.

6. $P(x) = x^3 + 2x^2 - 4x - 8$



Solve each equation.

7. $\frac{12r}{r+2} = \frac{4}{r+2} - 6$

8. $\frac{4x}{x-4} = \frac{2x+8}{x-4}$

9. $-\frac{6}{x} + 1 = \frac{7}{x^2}$

10. $\frac{2}{d+2} + \frac{8}{d-2} = \frac{14}{d^2-4}$

Simplify. Identify any x-values for which the expression is undefined.

11. $\frac{x^2 + 3x + 2}{x^2 - 3x - 4}$

12. $\frac{4x^6}{2x^4}$

13. $\frac{x^2 - x^3}{2x^2 - 5x + 3}$

14. $\frac{x^3 + x^2 - 20x}{x^2 - 16}$

15. $\frac{3x^2 - 9x - 12}{6x^2 + 9x + 3}$

16. $\frac{9 - 3x}{15 - 2x - x^2}$

Multiply. Simplify.

17. $\frac{4x+16}{2x+6} \cdot \frac{x^2+2x-3}{x+4}$

18. $\frac{x+3}{x-1} \cdot \frac{x^2-2x+1}{x^2+5x+6}$

Divide. Simplify.

19. $\frac{5x^6}{x^2y} \div \frac{10x^2}{y}$

20. $\frac{x^2 - 2x - 8}{x^2 - 2x - 15} \div \frac{2x^2 - 8x}{2x^2 - 10x}$

Find the least common multiple for each pair.

21. $3x^2y^6$ and $5x^3y^2$

22. $x^2 + x - 2$ and $x^2 - x - 6$

Add or subtract. Simplify.

23. $\frac{2x-3}{x+4} + \frac{4x-5}{x+4}$

24. $\frac{x+12}{2x-5} - \frac{3x-2}{2x-5}$

25. $\frac{x+4}{x^2-x-12} + \frac{2x}{x-4}$

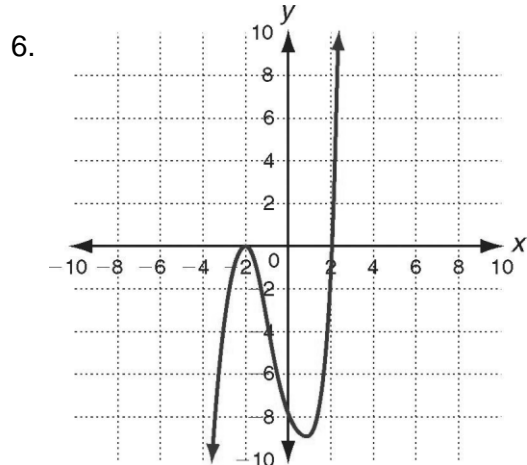
26. $\frac{3x^2-1}{x^2-3x-18} - \frac{x+2}{x-6}$

1. -6; 4; 3; as $x \rightarrow -\infty, y \rightarrow -\infty$: and as $x \rightarrow +\infty, y \rightarrow -\infty$

2. -16; 3; 2; as $x \rightarrow -\infty, y \rightarrow +\infty$: and as $x \rightarrow +\infty, y \rightarrow -\infty$

3. Odd; negative 4. Even; positive

5. Odd; positive



7. $r = -\frac{4}{9}$

8. no solution.

9. $x = 7$ and $x = -1$

10. $d = \frac{1}{5}$

11. $\frac{x+2}{x-4}$; $x \neq -1, x \neq 4$

12. $2x^2$; $x \neq 0$

13. $\frac{-x^2}{2x-3}$; $x \neq 1, x \neq \frac{3}{2}$

14. $\frac{x^2+5x}{x+4}$; $x \neq 4, x \neq -4$

15. $\frac{x-4}{2x+1}$; $x \neq -1, x \neq -\frac{1}{2}$

16. $\frac{3}{x+5}$; $x \neq 3, x \neq -5$

17. $2x - 2$

18. $\frac{x-1}{x+2}$

19. $\frac{x^2}{2}$

20. $\frac{x+2}{x+3}$

21. $15x^3y^6$

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

23. $\frac{6x-8}{x+4}$

24. $\frac{-2x+14}{2x-5}$

25. $\frac{2x^2+7x+4}{x^2-x-12}$

26. $\frac{2x^2-5x-7}{x^2-3x-18}$