

Assignment

Determine the equations of any vertical asymptotes and the values of x for any holes in the graph of each rational function.

1. $f(x) = \frac{6}{x^2 + 3x - 10}$

2. $f(x) = \frac{x - 7}{x^2 - 10x + 21}$

3. $f(x) = \frac{x^2 + 9x + 20}{x + 5}$

V.A. _____

V.A. _____

V.A. _____

Hole(s) _____

Hole(s) _____

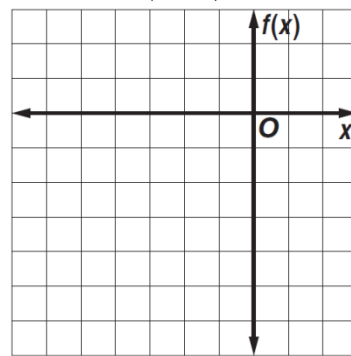
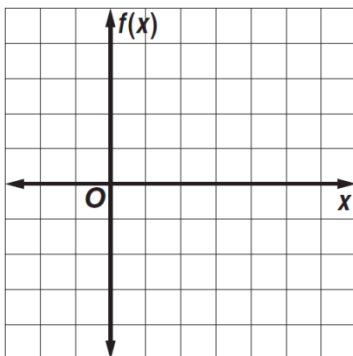
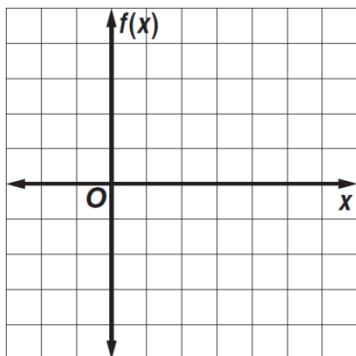
Hole(s) _____

Graph each rational function.

4. $f(x) = \frac{-4}{x - 2}$

5. $f(x) = \frac{x - 3}{x - 2}$

6. $f(x) = \frac{3x}{(x + 3)^2}$



V.A. _____

V.A. _____

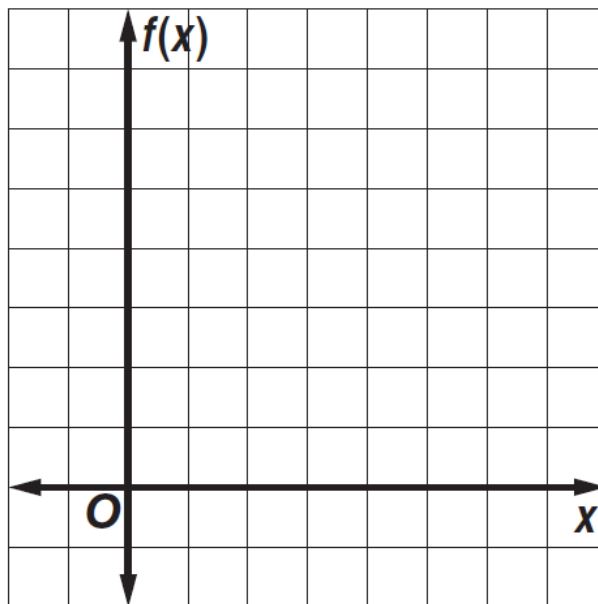
V.A. _____

Hole(s) _____

Hole(s) _____

Hole(s) _____

7. Working alone, Tawa can give the shed a coat of paint in 6 hours. It takes her father x hours working alone to give the shed a coat of paint. The equation $f(x) = \frac{6+x}{6x}$ describes the portion of the job Tawa and her father working together can complete in 1 hour. Graph $f(x) = \frac{6+x}{6x}$ for $x \geq 0, y \geq 0$. If Tawa's father can complete the job in 4 hours alone, what portion of the job can they complete together in 1 hour?



State whether each equation represents a *direct*, *joint*, or *inverse* variation. Then name the constant of variation.

1. $u = 8wz$

2. $p = 4x$

3. $L = \frac{5}{k}$

4. $xy = 4.5$

5. $\frac{C}{d} = \pi$

6. $2d = mn$

7. $\frac{1.25}{g} = h$

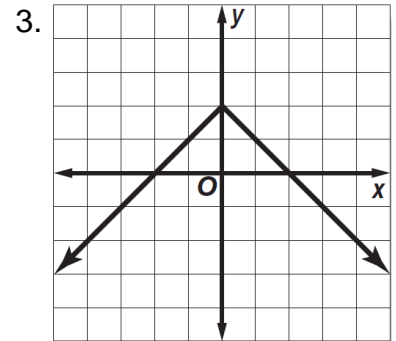
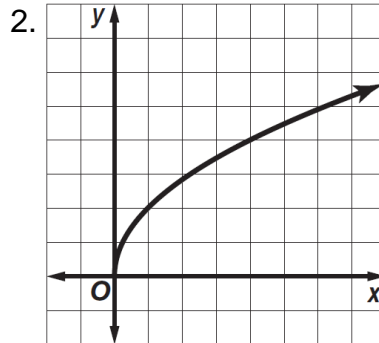
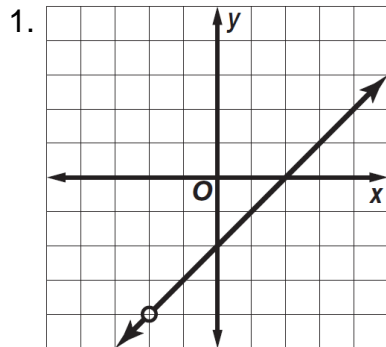
8. $y = \frac{3}{4x}$

9. The volume V of a gas varies inversely as its pressure P . If $V = 80$ cubic centimeters when $P = 2000$ millimeters of mercury, find V when $P = 320$ millimeters of mercury.

10. The length S that a spring will stretch varies directly with the weight F that is attached to the spring. If a spring stretches 20 inches with 25 pounds attached, how far will it stretch with 15 pounds attached?

11. The area A of a trapezoid varies jointly as its height and the sum of its bases. If the area is 480 square meters when the height is 20 meters and the bases are 28 meters and 20 meters, what is the area of the trapezoid when its height is 8 meters and its bases are 10 meters and 15 meters?

Identify the type of function represented by each graph.



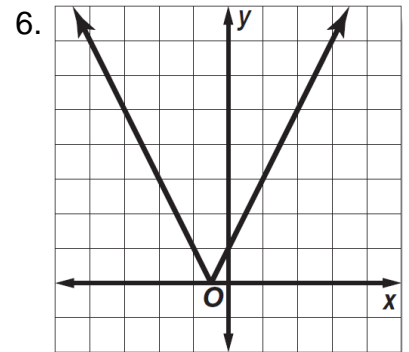
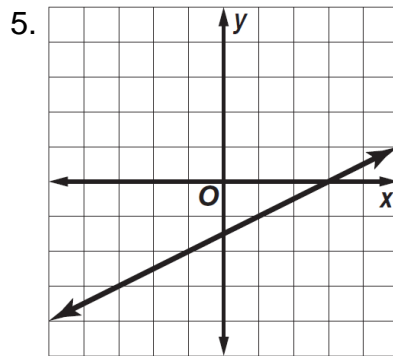
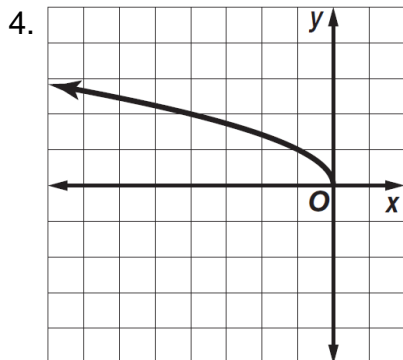
Match each graph with an equation below.

A. $y = |2x + 1|$

B. $y = \lfloor 2x + 1 \rfloor$

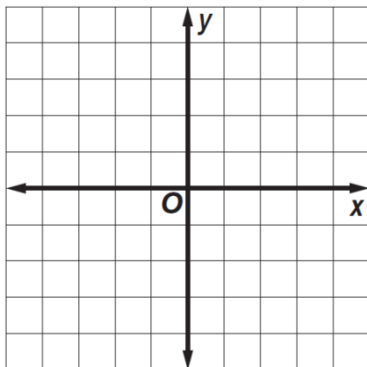
C. $y = \frac{x-3}{2}$

D. $y = \sqrt{-x}$

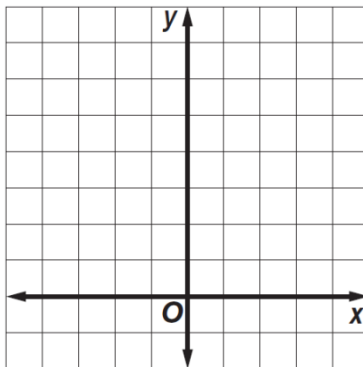


Identify the type of function represented by each equation. Then graph the equation.

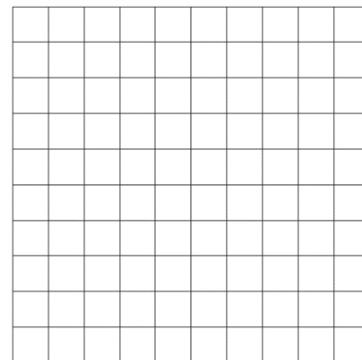
7. $y = -3$



8. $y = 2x^2 + 1$



9. $y = \frac{x^2 + 5x + 6}{x + 2}$



10. A parking lot charges \$10 to park for the first day or part of a day. After that, it charges an additional \$8 per day or part of a day. Describe the graph and find the cost of parking for $6\frac{1}{2}$ days.