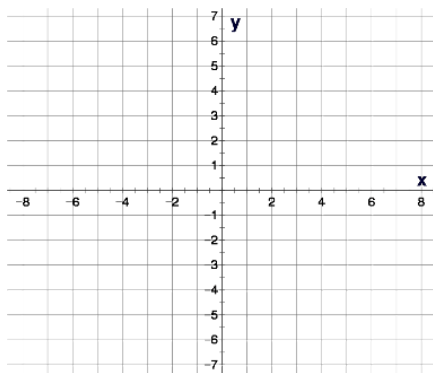
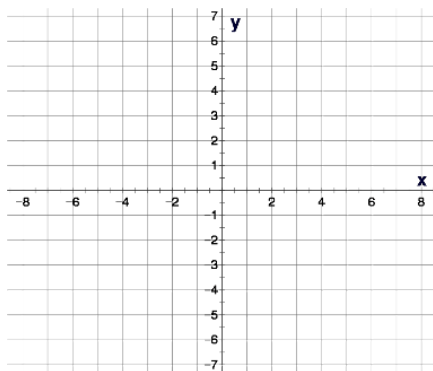


Graph transformations of a function using parameters

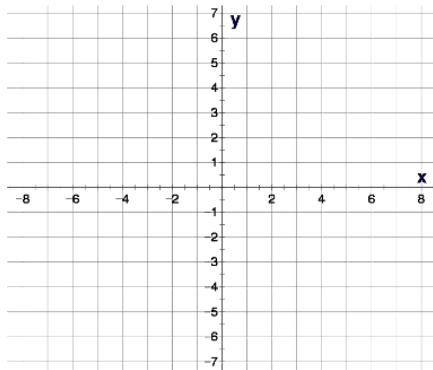
$$y = f(x)$$



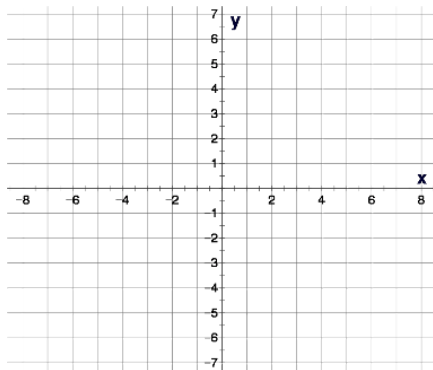
1. $y = f(x - 4)$



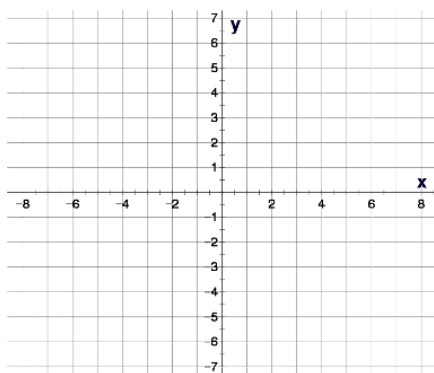
2. $y = f(x + 2)$



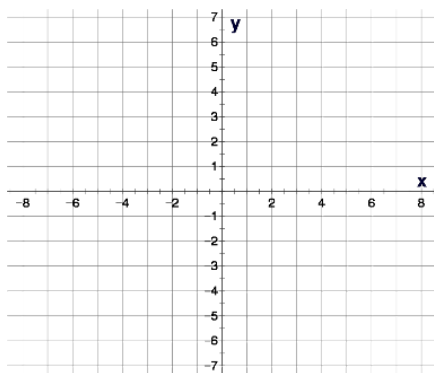
3. $y = -f(x)$



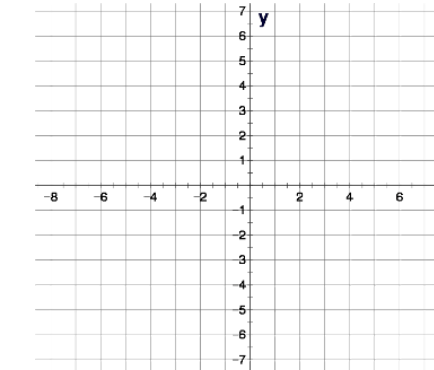
$$y = g(x)$$



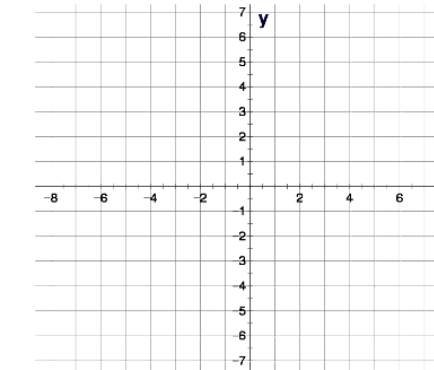
1. $y = g(x - 3)$



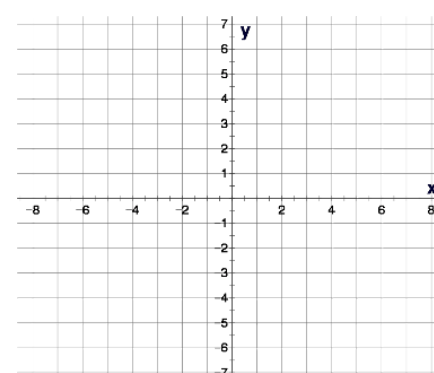
2. $y = g(x + 4)$



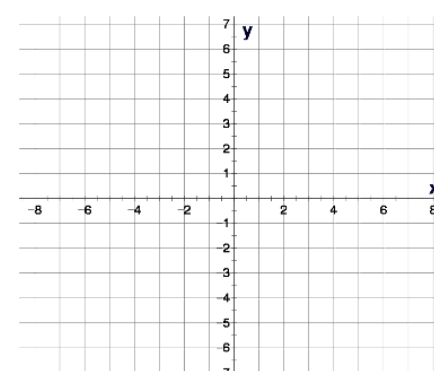
3. $y = -g(x)$



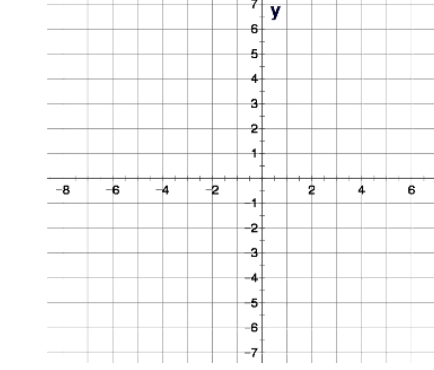
$$y = h(x)$$



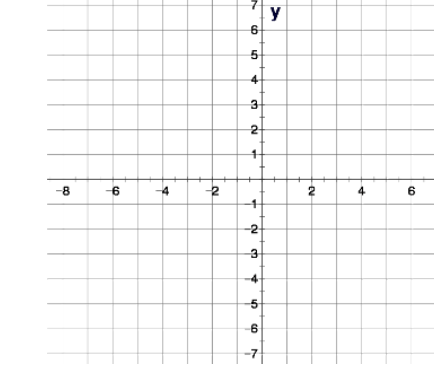
1. $y = h(x - 2)$



2. $y = h(x + 3)$

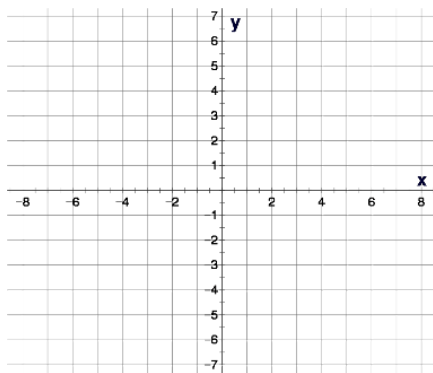


3. $y = -h(x)$

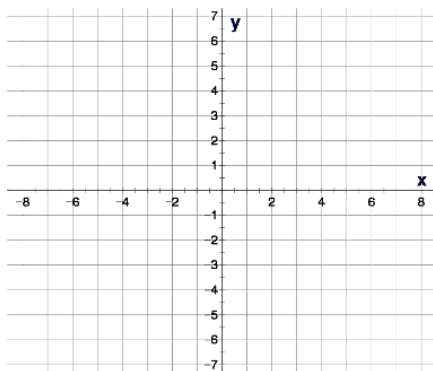


Graph transformations of a function using parameters

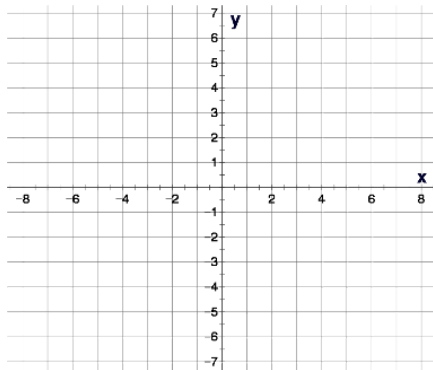
$$y = f(x)$$



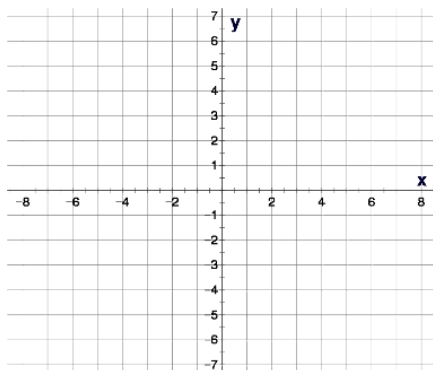
1. $y = f(x) - 4$



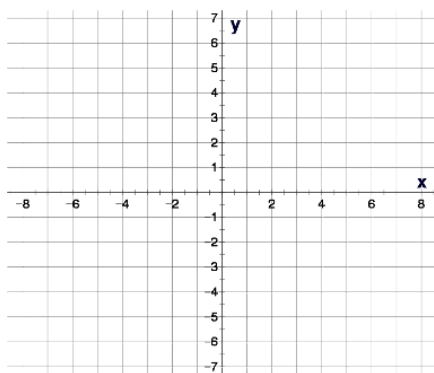
2. $y = f(x) + 2$



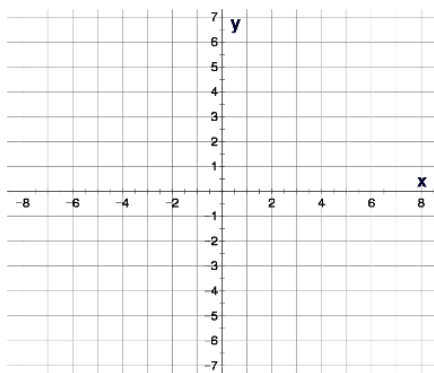
3. $y = f(-x)$



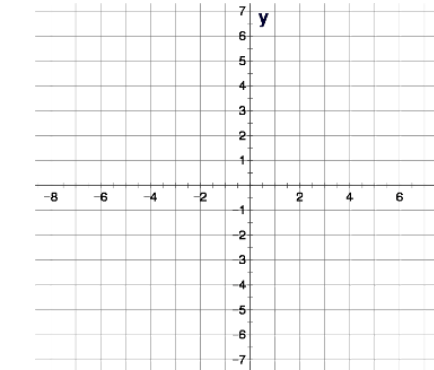
$$y = g(x)$$



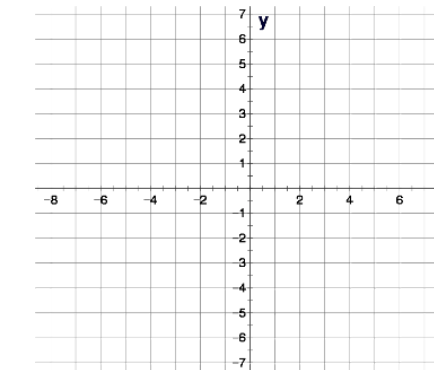
1. $y = g(x) - 3$



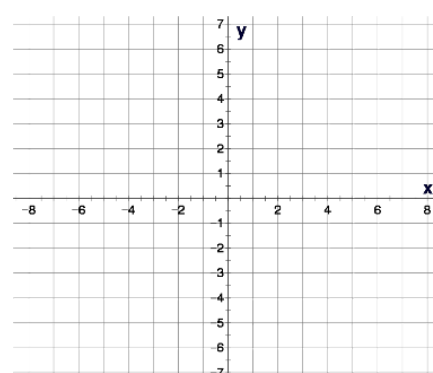
2. $y = g(x) + 1$



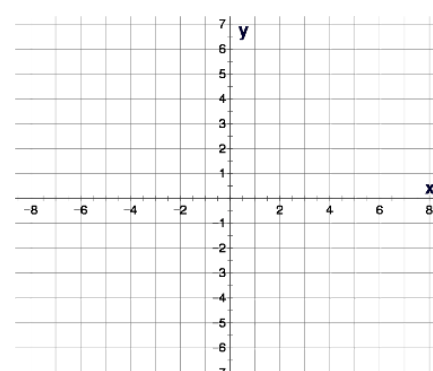
3. $y = g(-x)$



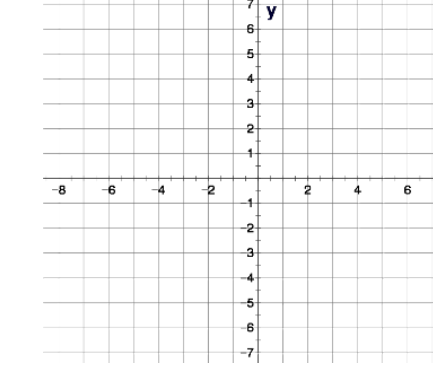
$$y = h(x)$$



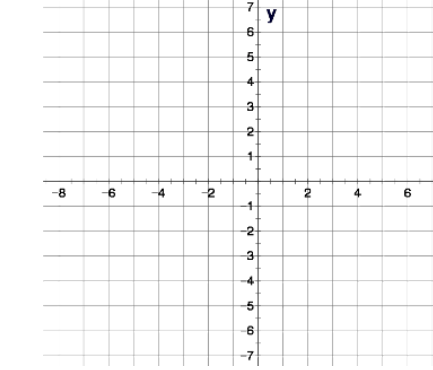
1. $y = h(x) - 2$



2. $y = h(x) + 2$

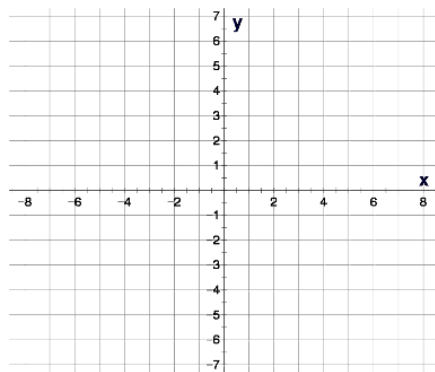


3. $y = h(-x)$

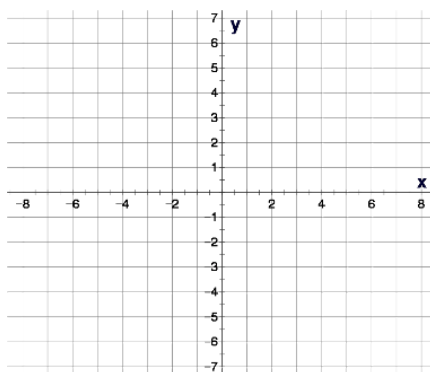


Graph by transformation, label points vertices and endpoints

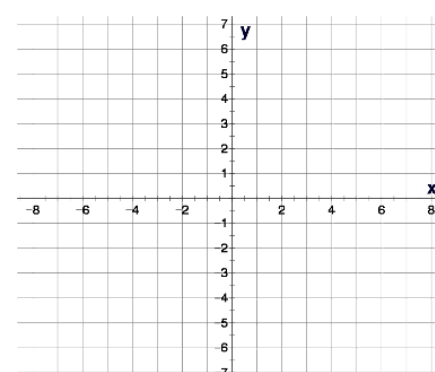
$$y = x^2$$



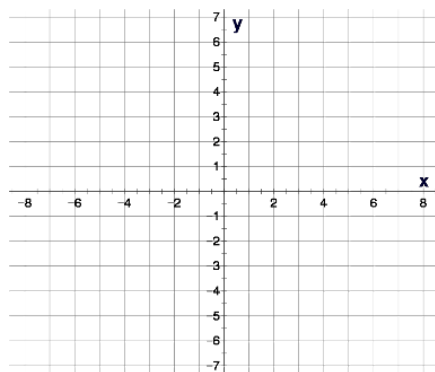
$$y = \sqrt{x}$$



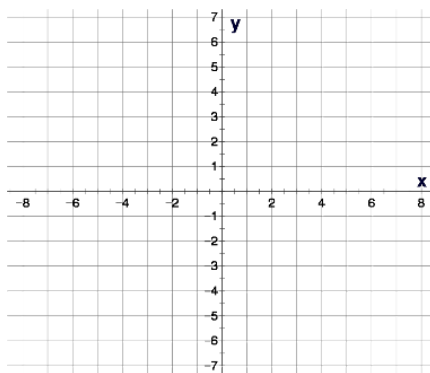
$$y = |x|$$



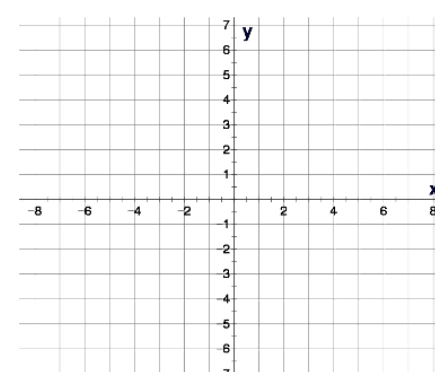
1. $y = (x - 2)^2$



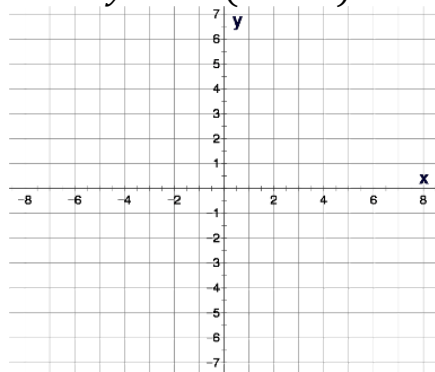
1. $y = \sqrt{x + 4}$



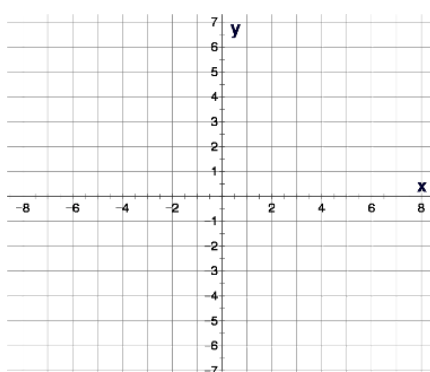
1. $y = |x + 3|$



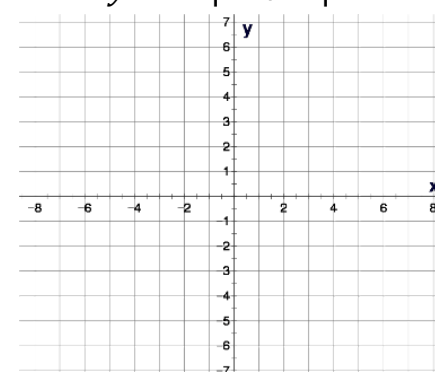
2. $y = -(x - 2)^2$



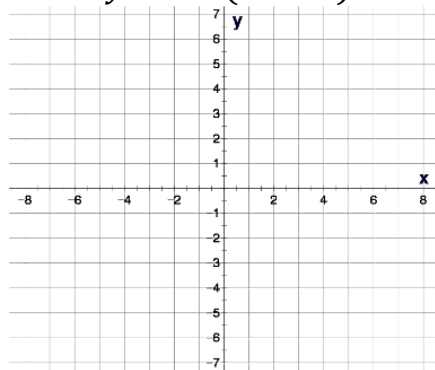
2. $y = -\sqrt{x + 4}$



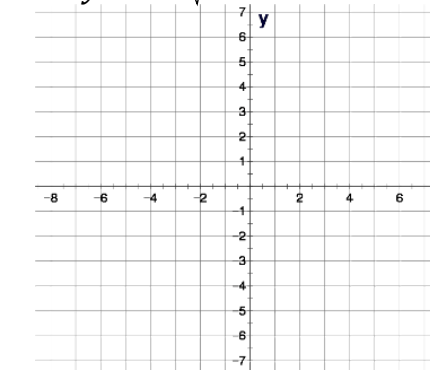
2. $y = -|x + 3|$



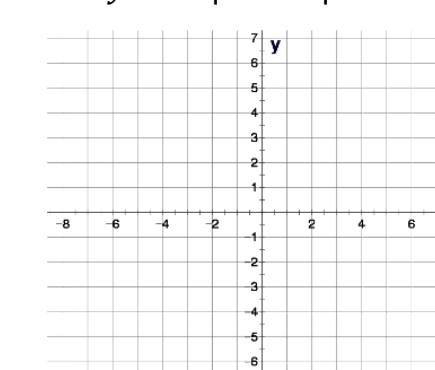
3. $y = -(x - 2)^2 + 3$



3. $y = -\sqrt{x + 4} + 5$

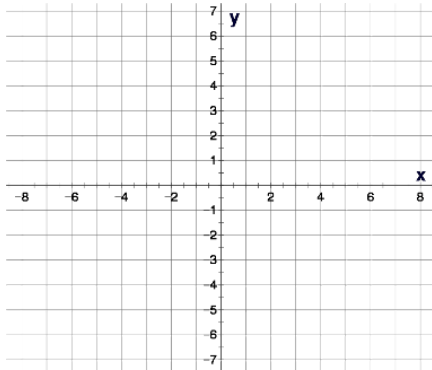


3. $y = -|x + 3| - 4$

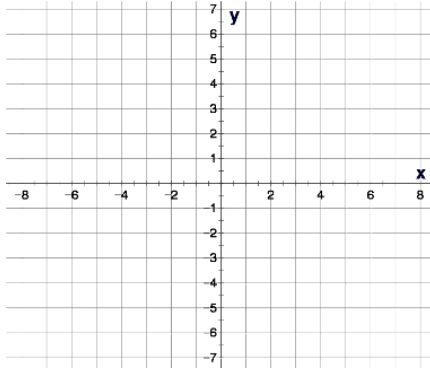


Graph by transformation, label points vertices and endpoints

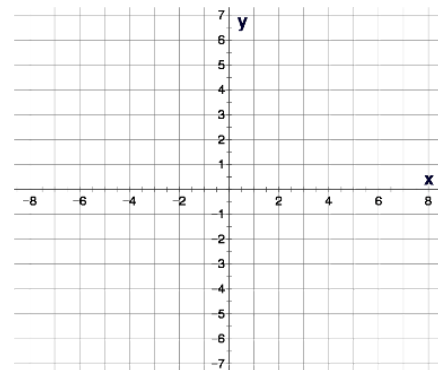
$$y = x^2$$



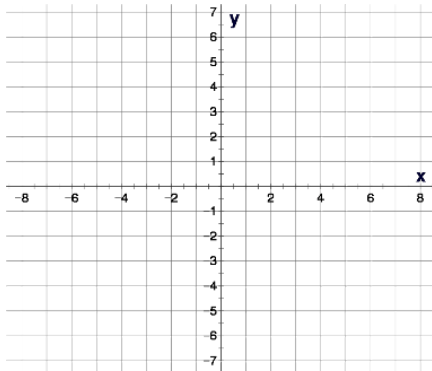
$$y = \sqrt{x}$$



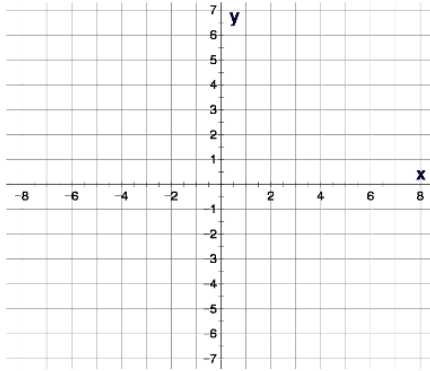
$$y = |x|$$



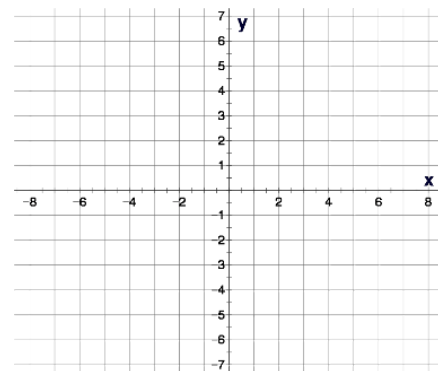
4. $y = (x + 2)^2$



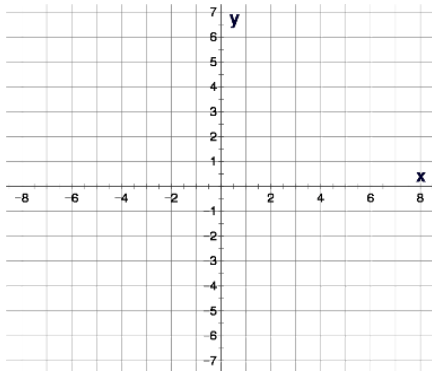
4. $y = \sqrt{x + 4}$



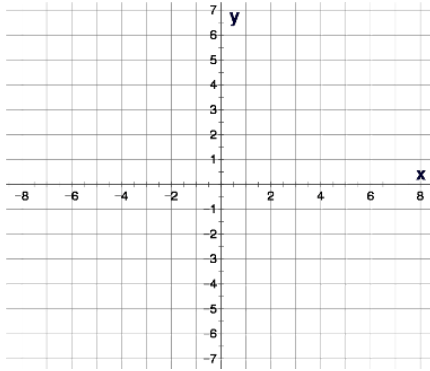
4. $y = |x - 3|$



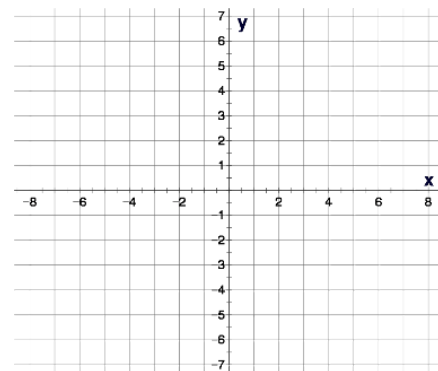
5. $y = (-x + 2)^2$



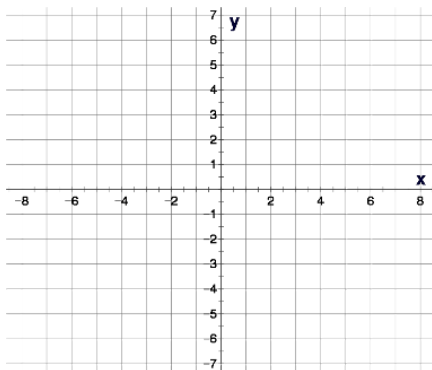
5. $y = \sqrt{-x + 4}$



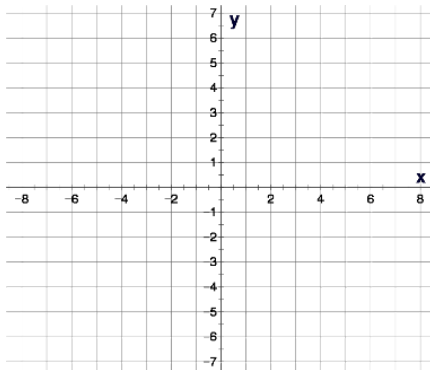
5. $y = |-x - 3|$



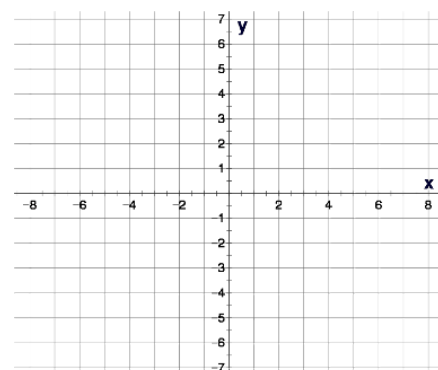
6. $y = (-x + 2)^2 - 3$



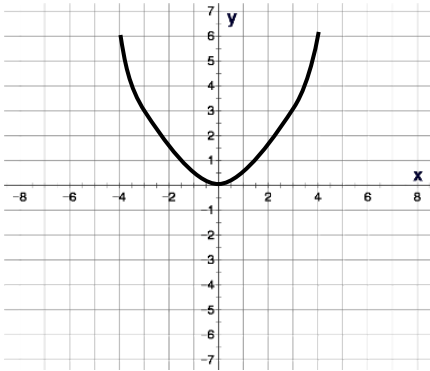
6. $y = \sqrt{-x + 4} + 5$



6. $y = |-x - 3| - 4$



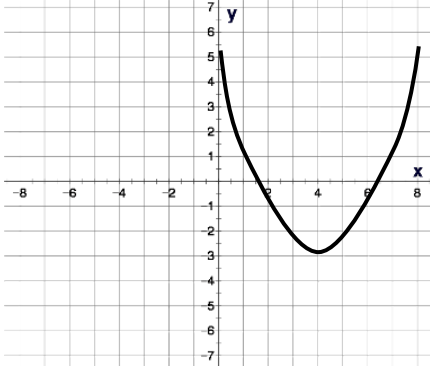
1.



Domain:

Range:

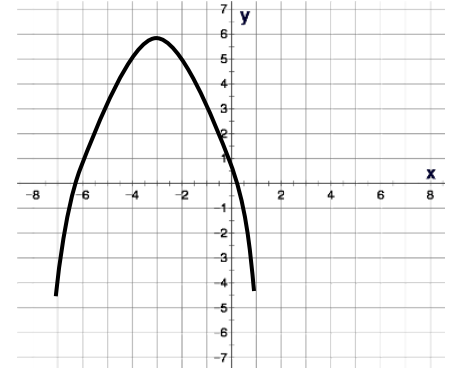
1.



Domain:

Range:

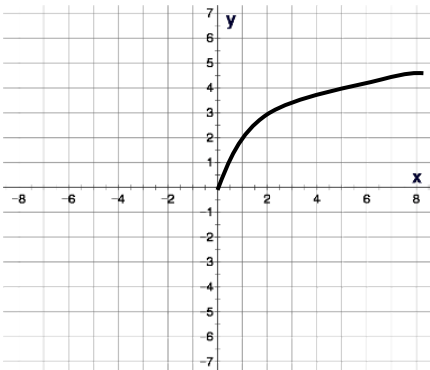
1.



Domain:

Range:

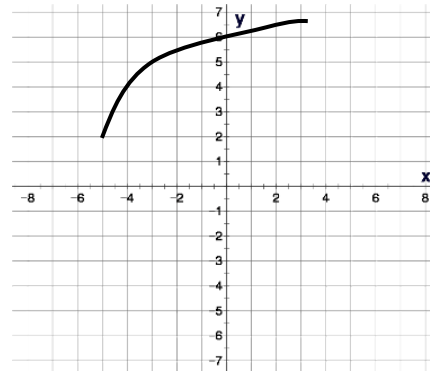
2.



Domain:

Range:

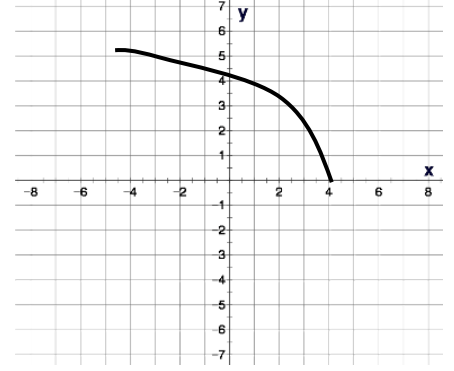
2.



Domain:

Range:

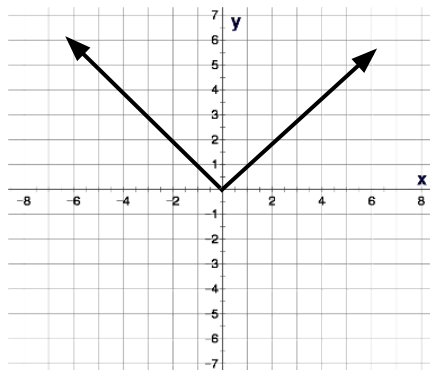
2.



Domain:

Range:

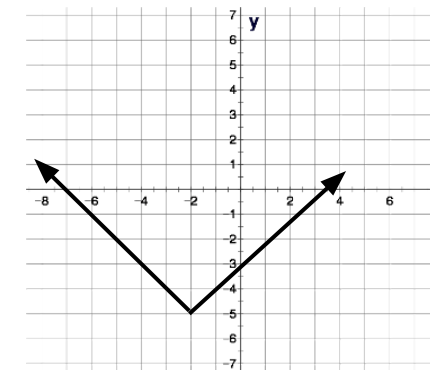
3.



Domain:

Range:

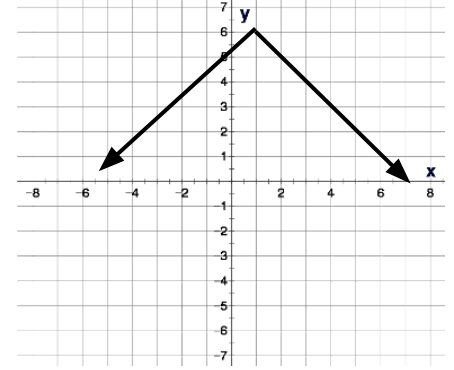
3.



Domain:

Range:

3.

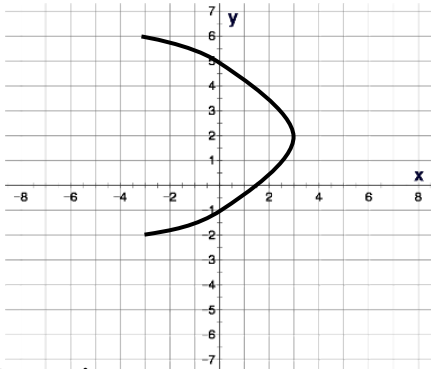


Domain:

Range:

Find the domain and range of the graph

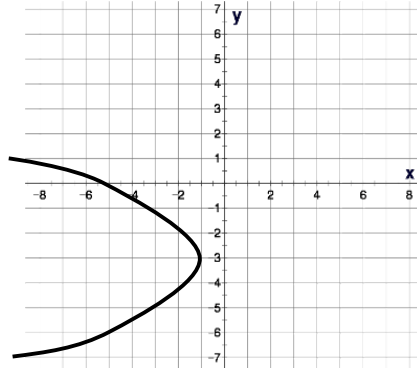
4.



Domain:

Range:

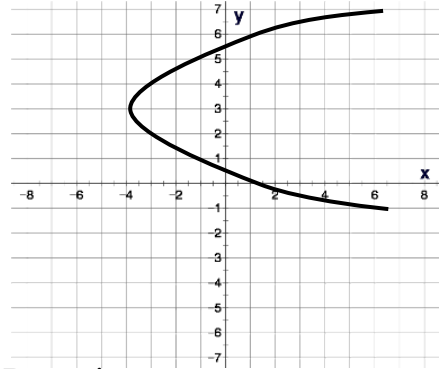
4.



Domain:

Range:

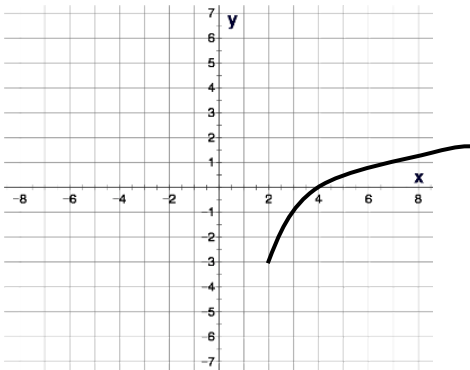
4.



Domain:

Range:

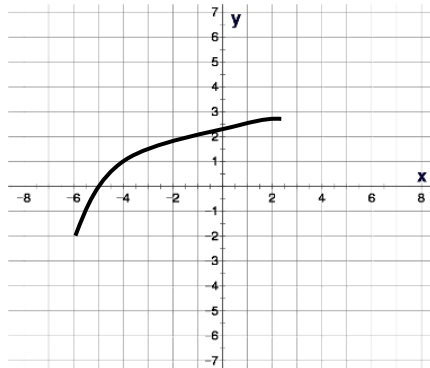
5.



Domain:

Range:

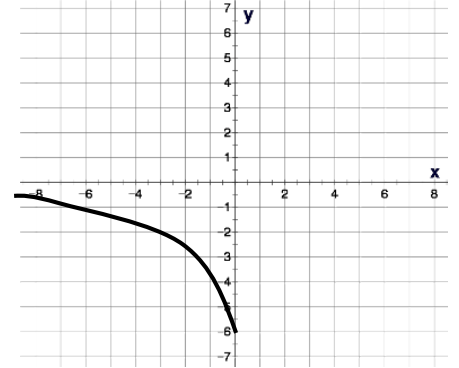
5.



Domain:

Range:

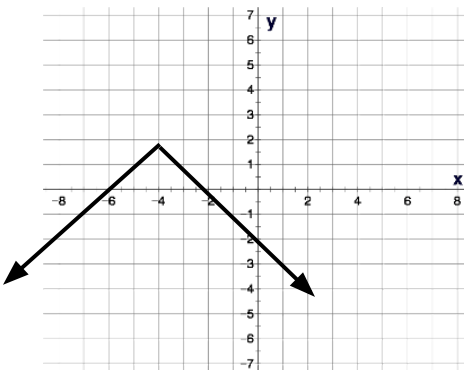
5.



Domain:

Range:

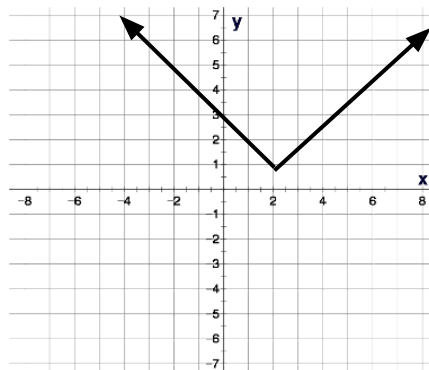
6.



Domain:

Range:

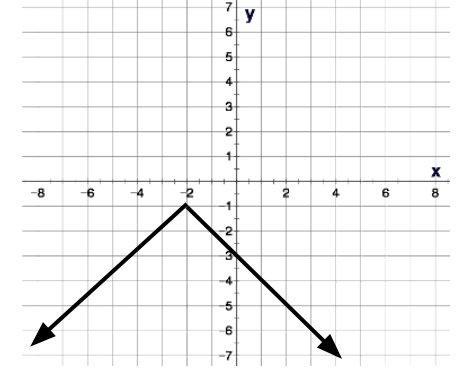
6.



Domain:

Range:

6.



Domain:

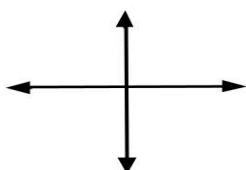
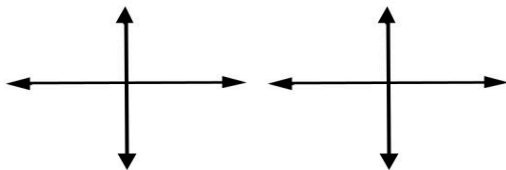
Range:

1. $y = \sqrt{x - 2} + 3$

$y =$

$y =$

$y =$



Domain:

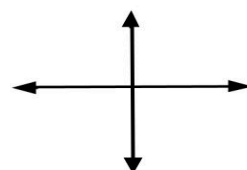
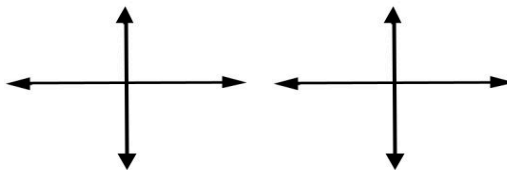
Range:

1. $y = (x - 2)^2 + 3$

$y =$

$y =$

$y =$



Domain:

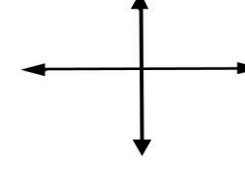
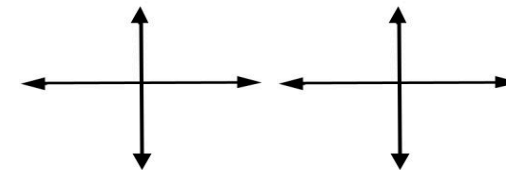
Range:

1. $y = |x - 2| + 3$

$y =$

$y =$

$y =$



Domain:

Range:

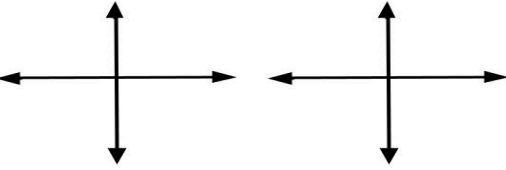
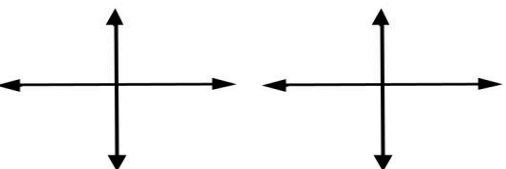
2. $y = -\sqrt{x - 2} + 3$

$y =$

$y =$

$y =$

$y =$



Domain:

Range:

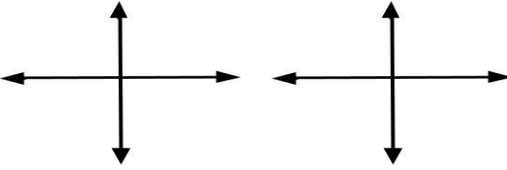
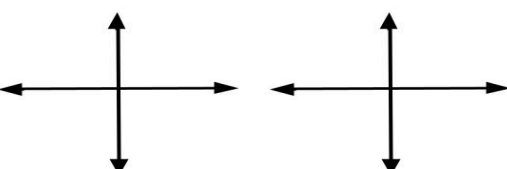
2. $y = -(x - 2)^2 + 3$

$y =$

$y =$

$y =$

$y =$



Domain:

Range:

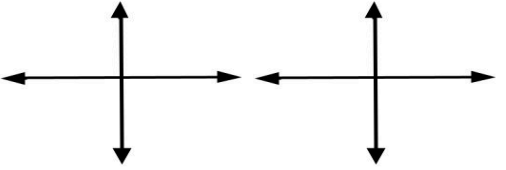
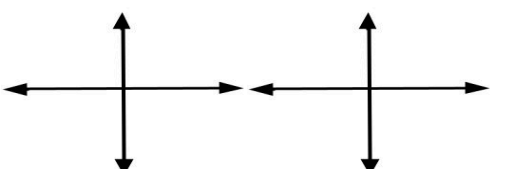
2. $y = -|x - 2| + 3$

$y =$

$y =$

$y =$

$y =$



Domain:

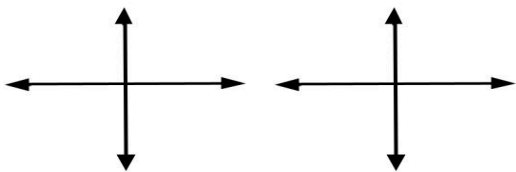
Range:

3. $y = -|x + 6|$

$y =$

$y =$

$y =$



Domain:

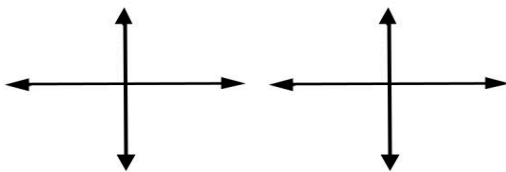
Range:

3. $y = -\sqrt{x + 5}$

$y =$

$y =$

$y =$



Domain:

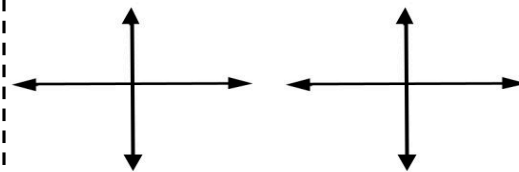
Range:

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

$y =$

$y =$

$y =$



Domain:

Range:

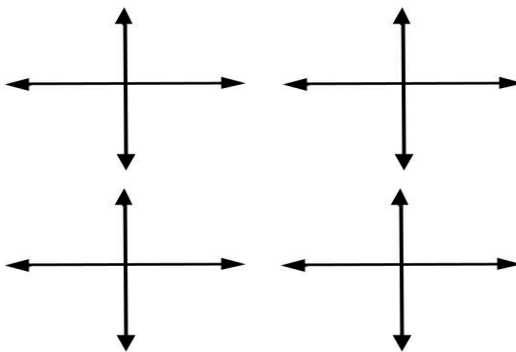
4. $y = -|x + 6| - 3$

$y =$

$y =$

$y =$

$y =$



Domain:

Range:

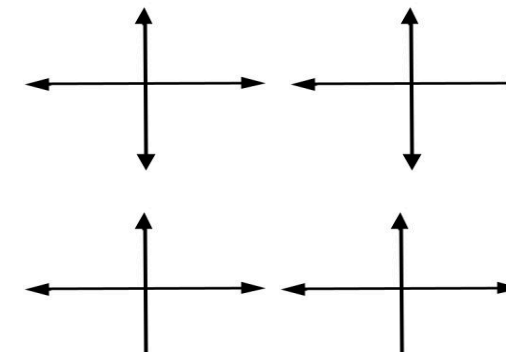
4. $y = -\sqrt{x + 5} + 2$

$y =$

$y =$

$y =$

$y =$



Domain:

Range:

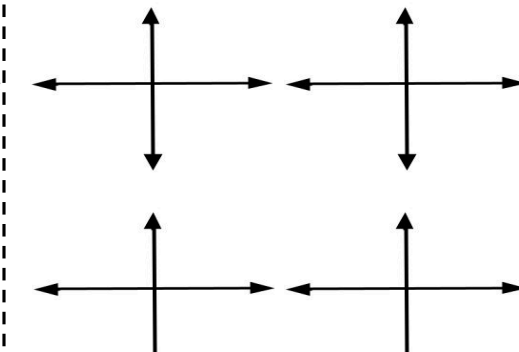
4. $y = -(x + 4)^2 - 4$

$y =$

$y =$

$y =$

$y =$



Domain:

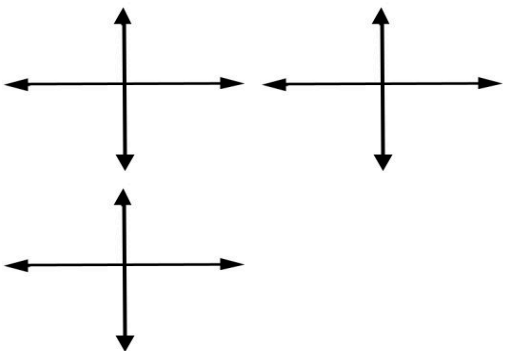
Range:

5. $y = |-x + 2|$

$y =$

$y =$

$y =$



Domain:

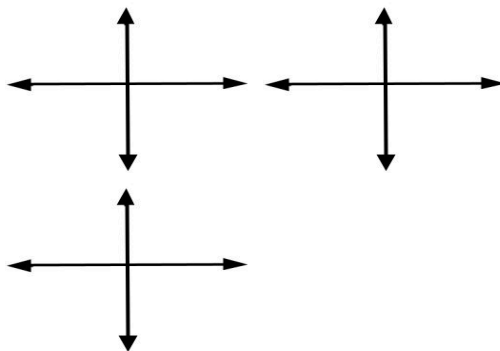
Range:

5. $y = \sqrt{-x + 3}$

$y =$

$y =$

$y =$



Domain:

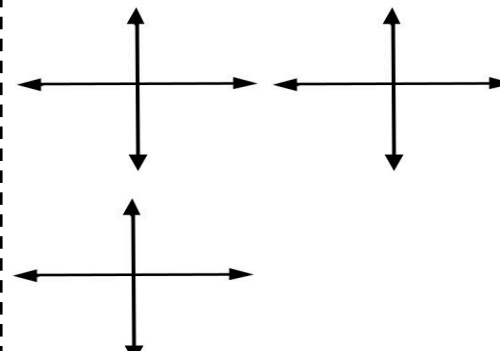
Range:

5. $y = (-x + 4)^2$

$y =$

$y =$

$y =$



Domain:

Range:

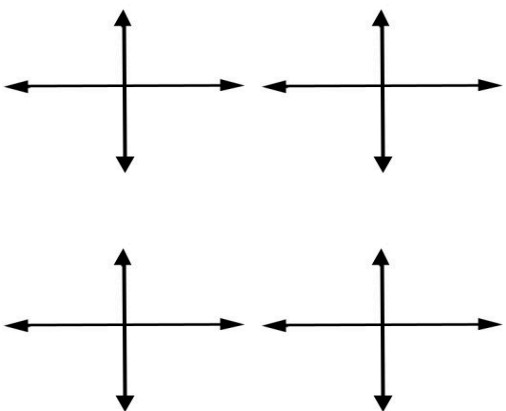
6. $y = |-x - 2| - 3$

$y =$

$y =$

$y =$

$y =$



Domain:

Range:

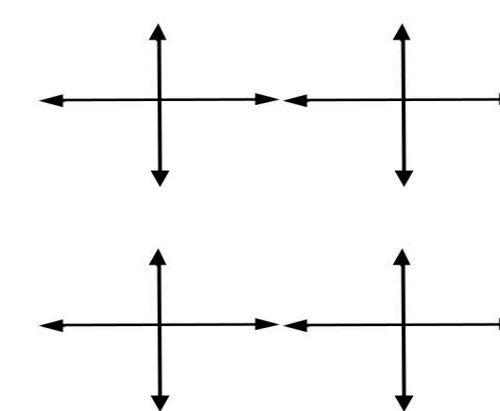
6. $y = \sqrt{-x - 3} + 2$

$y =$

$y =$

$y =$

$y =$



Domain:

Range:

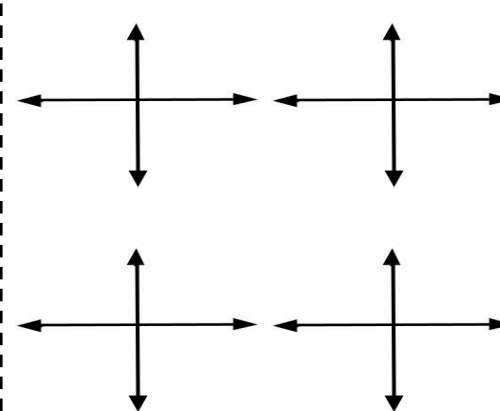
6. $y = (-x - 4)^2 - 4$

$y =$

$y =$

$y =$

$y =$



Domain:

Range:

Finding Domain of Functions Part 1

[29.1]

1. $f(x) = 3x - 10$

1. $f(x) = 3x^2 - 9x - 30$

1. $f(x) = x^3 + 3x^2 - 10x$

2. $f(x) = \frac{x+6}{-4x}$

2. $f(x) = \frac{5x-4}{10x}$

2. $f(x) = \frac{x+7}{-3x}$

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

3. $f(x) = \frac{2x+4}{x-7}$

3. $f(x) = \frac{x-1}{x-0}$

4. $f(x) = \frac{x-5}{4x+2}$

4. $f(x) = \frac{x+2}{2x-10}$

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

x : All real #'s $(-\infty, \infty)$ Graph

$x \neq 0$ $(-\infty, 0) \cup (0, \infty)$ Graph

$x \neq 7$ $(-\infty, 7) \cup (7, \infty)$ Graph

$x \neq 5$ $(-\infty, 5) \cup (5, \infty)$ Graph

5. $f(x) = \frac{x}{4x^2-9}$

5. $f(x) = \frac{2x+4}{9x^2-16}$

5. $f(x) = \frac{x^2-9}{169x^2-196}$

6. $f(x) = \frac{-8x}{x^2-9x+18}$

6. $f(x) = \frac{10}{x^2-11x+18}$

6. $f(x) = \frac{2x-4}{x^2-19x+18}$

$x \neq -\frac{4}{3}, x \neq \frac{4}{3} \quad (-\infty, -\frac{4}{3}) \cup (-\frac{4}{3}, \frac{4}{3}) \cup (\frac{4}{3}, \infty)$ Graph

$x \neq 2, x \neq 9 \quad (-\infty, 2) \cup (2, 9) \cup (9, \infty)$ Graph

$$7. \quad f(x) = \frac{x}{2x^2 + 7x - 15}$$

$$7. \quad f(x) = \frac{2x+4}{3x^2 - 13x - 10}$$

$$7. \quad f(x) = \frac{x^2 - 9}{6x^2 - 5x + 1}$$

$$8. \quad f(x) = \frac{x-8}{x^2 + 2x - 15}$$

$x \neq -\frac{2}{3}, x \neq 5$ $(-\infty, -\frac{2}{3}) \cup (-\frac{2}{3}, 5) \cup (5, \infty)$ Graph

$$8. \quad f(x) = \frac{2x-8}{x^2 - 3x - 10}$$

$$8. \quad f(x) = \frac{x^2 - 49}{x^2 - 7x - 18}$$

1. $f(x) = \sqrt{x + 4}$


1. $f(x) = \sqrt{x + 9}$

1. $f(x) = \sqrt{x - 1}$

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

2. $f(x) = \sqrt{3x - 9}$


2. $f(x) = \sqrt{4x + 16}$


$x \geq -9$ $[-9, \infty)$  9

3. $f(x) = \sqrt{-5x + 40}$

3. $f(x) = \sqrt{-2x + 18}$

3. $f(x) = \sqrt{-3x + 24}$

$x \geq 3$ $[3, \infty)$  3

$x \leq -9$ $(-\infty, -9]$  -9

Finding Domain Part 2

[30.2]

4. $f(x) = \sqrt{-5x - 60}$

4. $f(x) = \sqrt{-2x - 24}$

4. $f(x) = \sqrt{-3x - 60}$

5. $f(x) = \sqrt{18 - 3x}$

5. $f(x) = \sqrt{12 - 6x}$

5. $f(x) = \sqrt{18 - 2x}$

6. $f(x) = \sqrt{18 - 4x}$

6. $x \leq 2$ $(-\infty, 2]$ 2
 $f(x) = \sqrt{12 - 8x}$

6. $f(x) = \sqrt{18 - 10x}$

7. $f(x) = \sqrt{4x}$

7. $f(x) = \sqrt{8x}$

7. $f(x) = \sqrt{10x}$

8. $f(x) = \sqrt{x^2 - 7x + 6}$

8. $f(x) = \sqrt{x^2 - 9x + 8}$

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

$x \leq 1$ or $x \geq 8$ $(-\infty, 1] \cup [8, \infty)$ Graph

9. $f(x) = \sqrt{x^2 + 5x + 6}$

9. $f(x) = \sqrt{x^2 + 6x + 8}$

9. $f(x) = \sqrt{x^2 + 11x + 10}$

$x \leq -4, x \geq -2$ $(-\infty, -4] \cup [-2, \infty)$ Graph

10. $f(x) = \sqrt{x^2 - x - 20}$

10. $f(x) = \sqrt{x^2 - x - 12}$

10. $f(x) = \sqrt{x^2 - x - 6}$

11. $f(x) = \sqrt{x^2 - 5x + 6}$

11. $f(x) = \sqrt{x^2 - 6x + 8}$

11. $f(x) = \sqrt{x^2 - 11x + 10}$