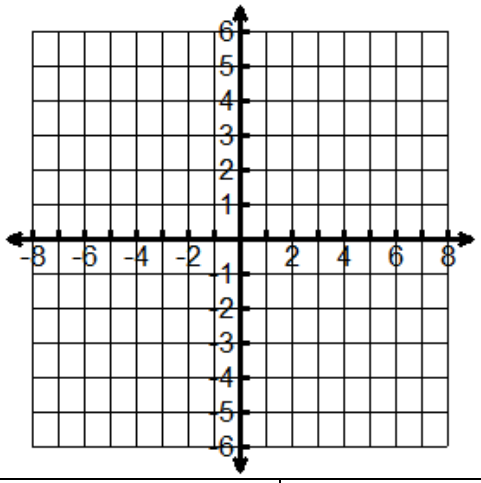
**Name** _____ **Date** _____

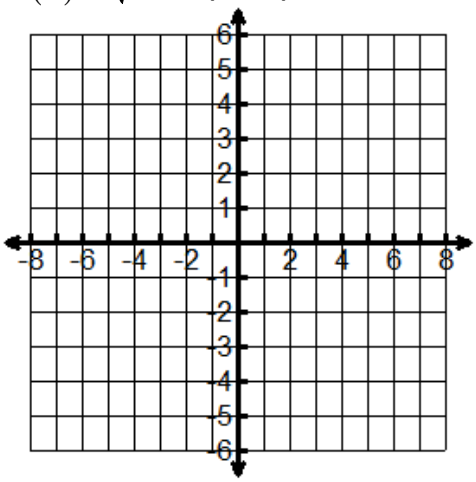
**Graph each function, fill in the chart, and make a table of points.**

1. $f(x) = -2\sqrt{-(x+1)} + 3$



| Starting Pt: | Inc or Dec: |
|---|---|
| Domain: | Range: |
| Abs. Max or Abs Min: | x-int: |
| End Behavior: $x \to$ ____, f(x) $\to$ _____ $x \to$ ____, f(x) $\to$ _____ | |

2. $f(x) = \sqrt[3]{-1/2(x-2)} + 1$



| Starting Pt: | Inc or Dec: |
|---|---|
| Domain: | Range: |
| Abs. Max or Abs Min: | y-int: |
| End Behavior: $x \to$ ____, f(x) $\to$ _____ $x \to$ ____, f(x) $\to$ _____ | |

**Using the graph of $f(x) = \sqrt{x}$ as a guide, describe the transformation.**

3. $g(x) = 4\sqrt{-\frac{1}{3}(x+8)} - 1$ _____

4. $g(x) = -\sqrt{3(x+17)} + 29$ _____

**Use the description to write the square root function *g*.**

5. The parent function $f(x) = \sqrt{x}$ is reflected across the *y*-axis, vertically stretched by a factor of 7, and translated 3 units down.

6. The parent function $f(x) = \sqrt{x}$ is translated 2 units right, reflected across the x-axis, and compressed horizontally by a factor of $\frac{1}{2}$.

7. The parent function $f(x)=\sqrt{x}$ is compressed vertically by a factor of 1/4 , reflected across the x-axis, and translated 6 units up.

8. The parent function $f(x)=\sqrt{x}$ is translated 8 units left, reflected across the y-axis, and stretched horizontally by a factor of 3.

9. $f(x)=\dfrac{2x^2+4x}{x^2+7x+10}$

Vertical Asymptote:

_____

Horizontal Asymptote:

_____

Slant Asymptote:

_____

Holes:

_____

x-int: _____

y-int: _____

Domain:

_____

Range:

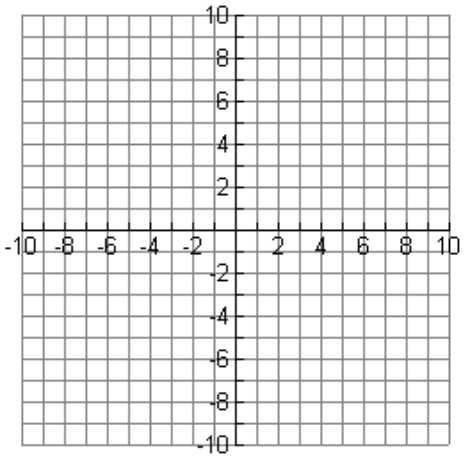
_____

INC:

_____

DEC:

_____




10. $f(x)=\dfrac{2x^2+5x-3}{x+2}$

Vertical Asymptote:

_____

Horizontal Asymptote:

_____

Slant Asymptote:

_____

Holes:

_____

x-int: _____

y-int: _____

Domain:

_____

Range:

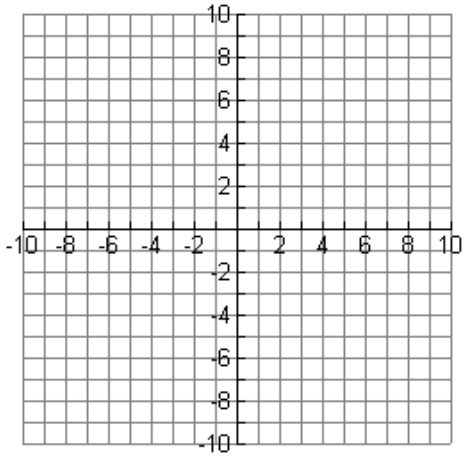
_____

INC:

_____

DEC:

_____




11. Can rational functions have Horizontal Asymptotes and Slant Asymptotes?

12. Can rational functions have Horizontal Asymptotes and Vertical Asymptotes?

13. $f(x) = \dfrac{x^2 - x - 20}{x^2 - 9}$

Vertical Asymptote: _____

Horizontal Asymptote: _____

Slant Asymptote: _____

Holes: _____

x-int: _____

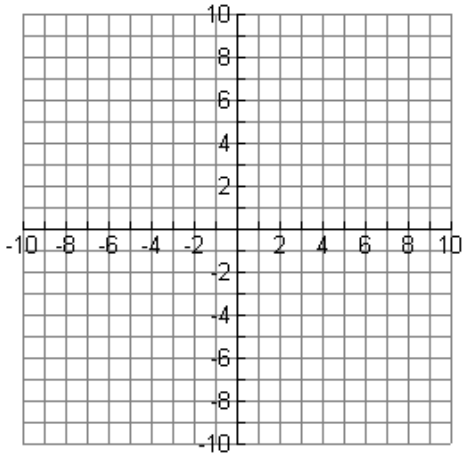
y-int: _____

Domain: _____

Range: _____

INC: _____

DEC: _____




14. Find all the Asymptotes of $g(x) = \dfrac{x^2 - 2x + 5}{x + 2}$

VA: _____

HA: _____

Slant: _____

15. What is the x-intercept and y-intercept for $h(x) = \dfrac{x - 3}{(x + 1)(x - 2)}$

x-int: _____

y-int: _____

16. Write the equation of a rational function with vertical asymptotes of x = 1, x = -2/3 and a y-intercept of (0, 3)

**Solve each inequality algebraically.** Write in interval notation**!!**

17. $\dfrac{6}{x + 1} < -3$

18. $\dfrac{x + 6}{x - 2} \geq 0$

_____ _____