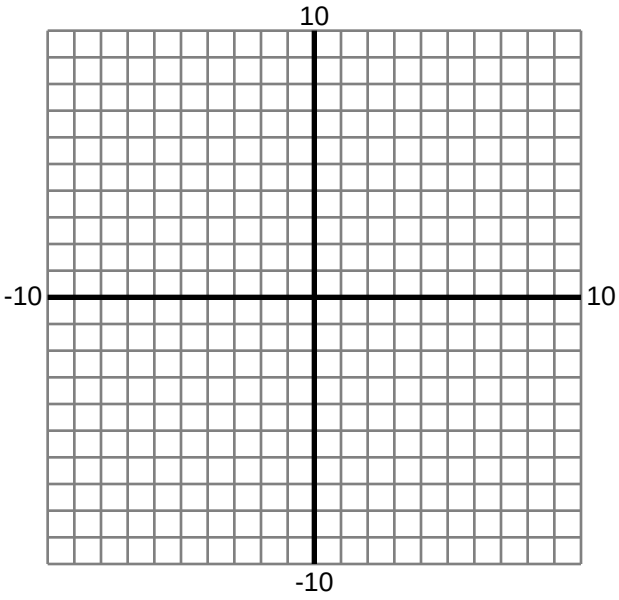
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

1) $f(x) = x^2 - 2x + 1$



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

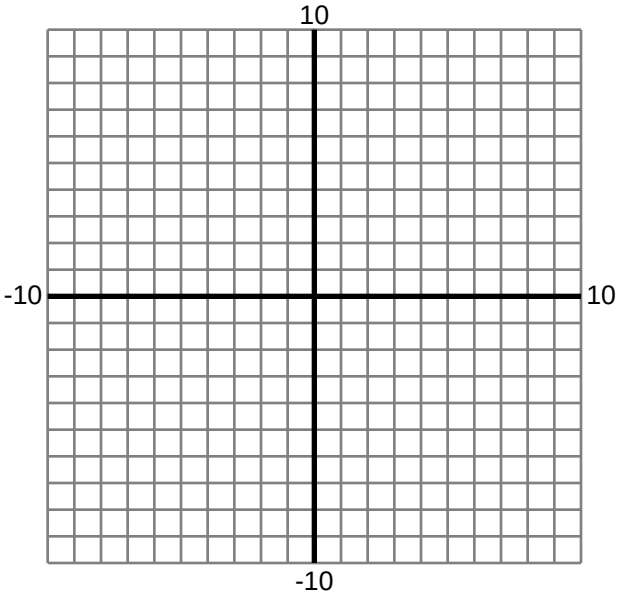
Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

2) $f(x) = \frac{1}{6}x^3 - \frac{1}{4}x^2$



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

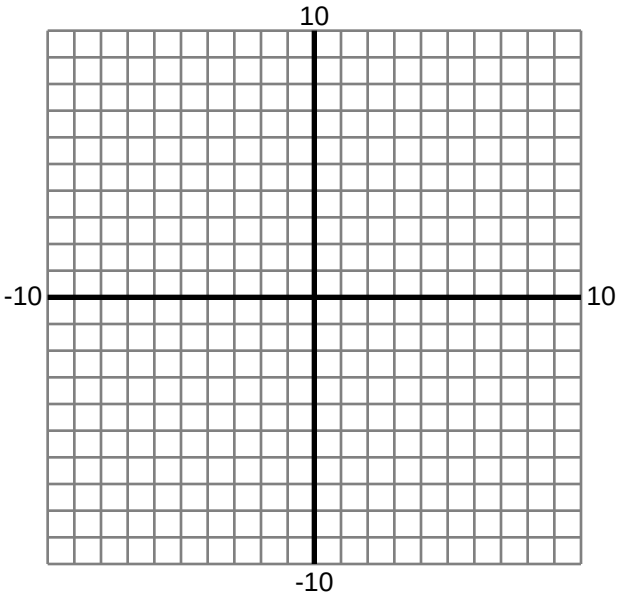
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

3) $f(x) = \frac{1}{6}x^3 + \frac{3}{2}x^2 + 4x$



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

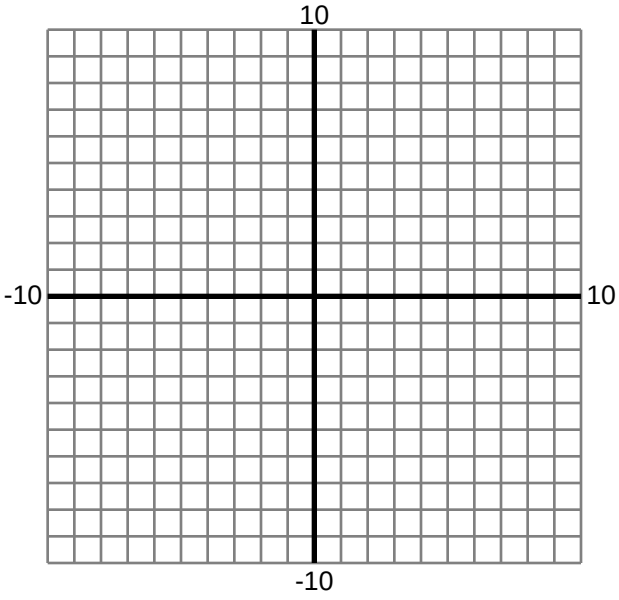
Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

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



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

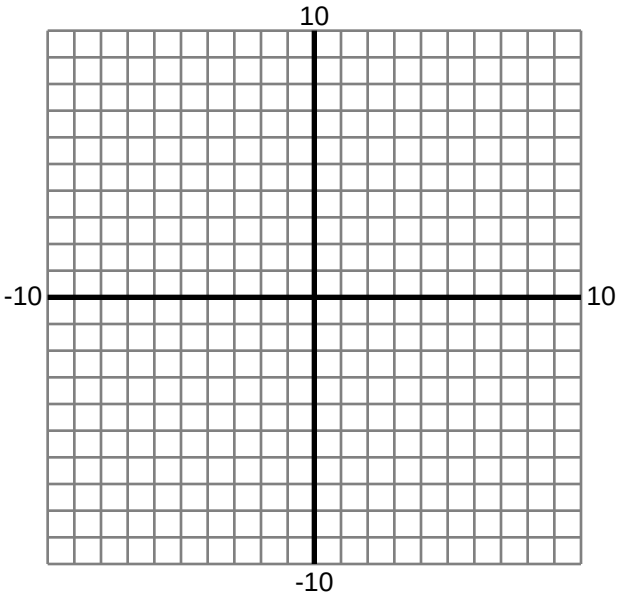
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

5) $f(x) = -x^2 - 5x - 4$



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

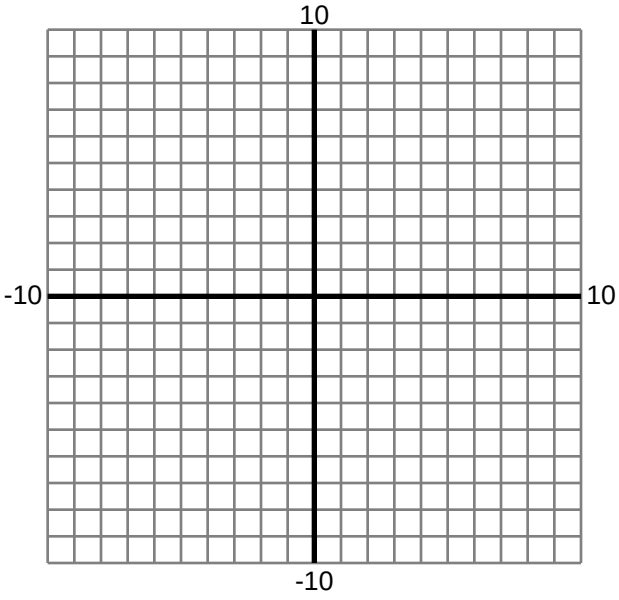
Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

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



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

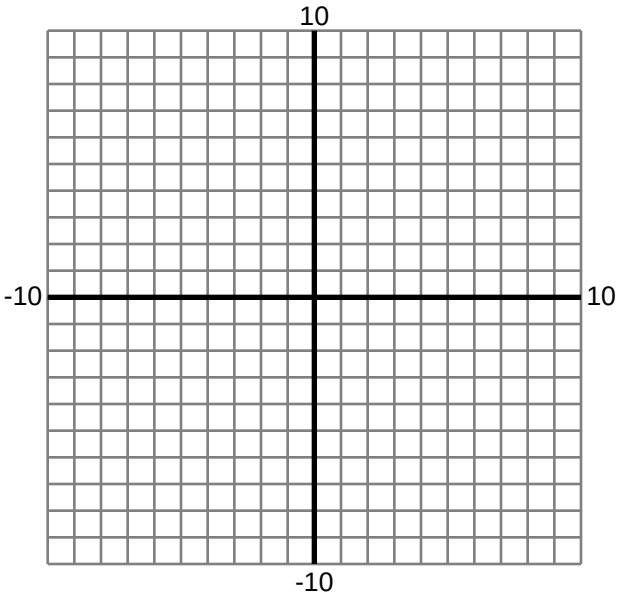
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

7) $f(x) = \frac{x^2-4}{\sqrt{x}} - 6$



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

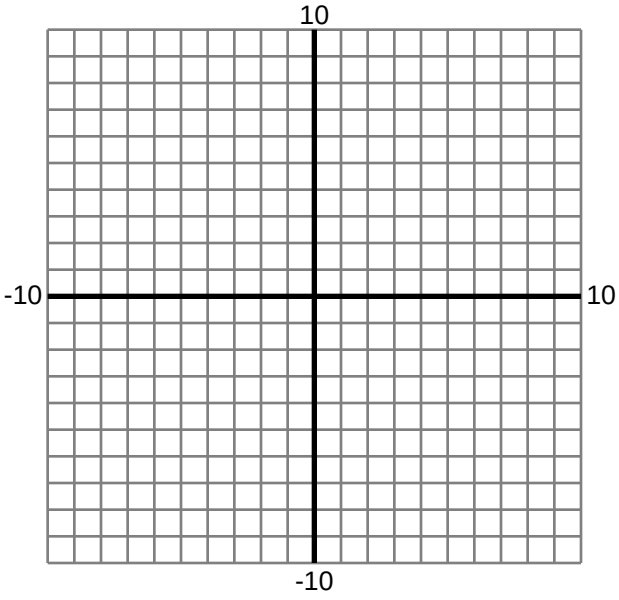
Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

8) $f(x) = \frac{x^2+4}{x}$



X-intercepts:

Y-intercept:

X-Values of Inflection Points:

X-Values of Critical Points:

Intervals Where Decreasing:

Intervals Where Increasing:

Intervals Where Concave Up:

Intervals Where Concave Down:

Relative Minima:

Relative Maxima

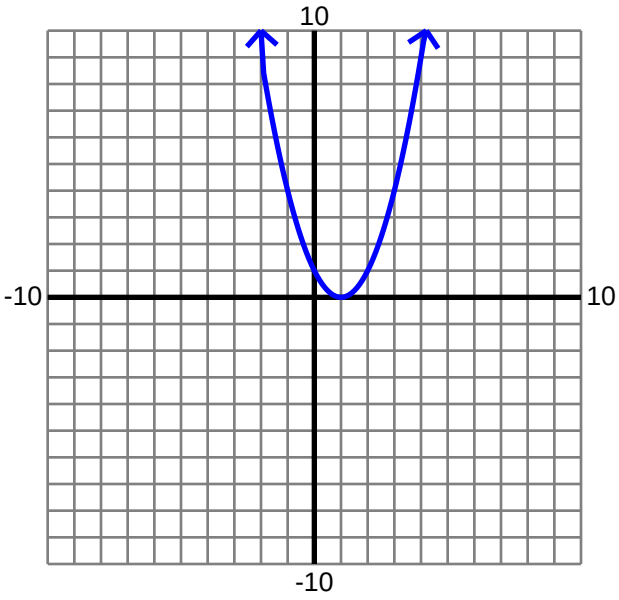
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

1) $f(x) = x^2 - 2x + 1$



X-intercepts: 1,1

Y-intercept: 1

X-Values of Critical Points: 1

X-Values of Inflection Points: None

Intervals Where Decreasing: (-∞, 1)

Intervals Where Increasing: (1, ∞)

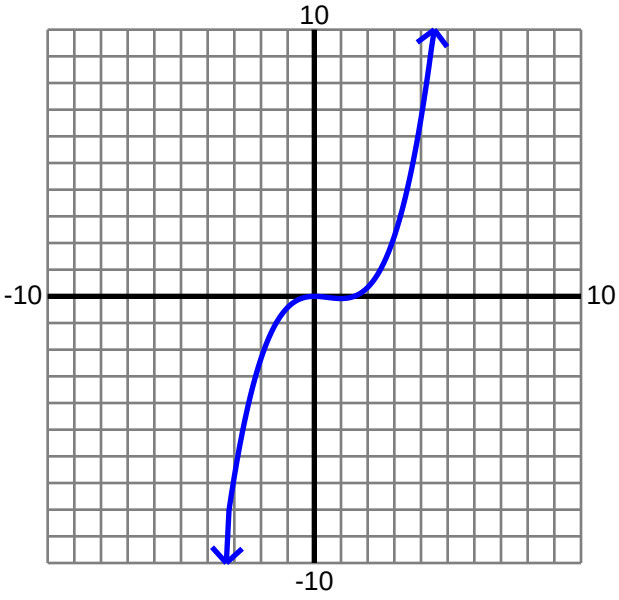
Intervals Where Concave Up: Always

Intervals Where Concave Down: Never

Relative Minima: 1

Relative Maxima: None

2) $f(x) = \frac{1}{6}x^3 - \frac{1}{4}x^2$



X-intercepts: 0, $\frac{3}{2}$

Y-intercept: 0

X-Values of Critical Points: 0,1

X-Values of Inflection Points: 0.5

Intervals Where Decreasing: (0, 1)

Intervals Where Increasing: (-∞, 0) ∪ (1, ∞)

Intervals Where Concave Up: (0.5, ∞)

Intervals Where Concave Down: (-∞, 0.5)

Relative Minima: 1

Relative Maxima: 0

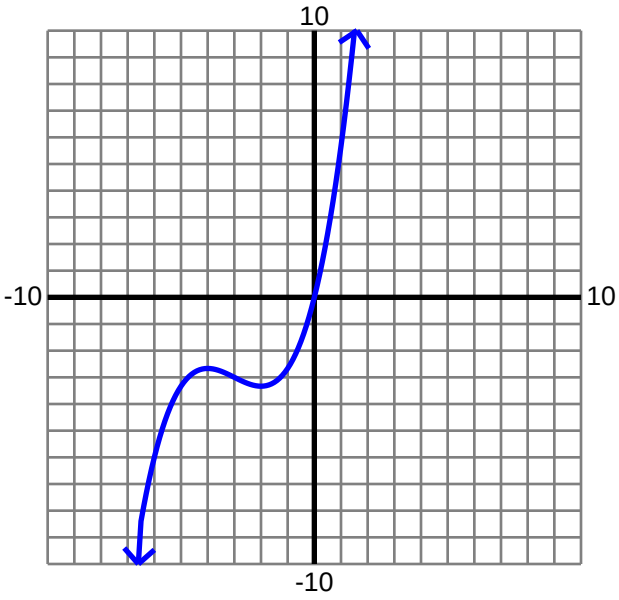
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

3) $f(x) = \frac{1}{6}x^3 + \frac{3}{2}x^2 + 4x$



X-intercepts: 0

Y-intercept: 0

X-Values of Critical Points: -4,-2

X-Values of Inflection Points: -3

Intervals Where Decreasing: (-4, -2)

Intervals Where Increasing: $(-\infty, -4) \cup (-2, \infty)$

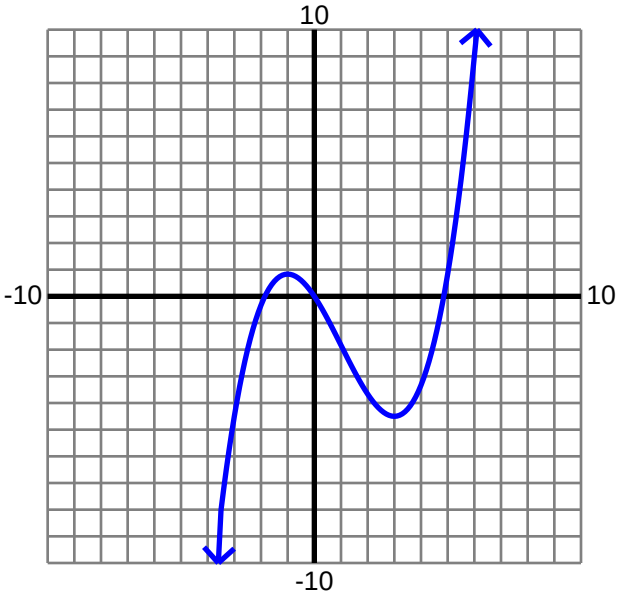
Intervals Where Concave Up: $(-3, \infty)$

Intervals Where Concave Down: $(-\infty, -3)$

Relative Minima: -2

Relative Maxima: -4

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



X-intercepts: 0, $3(\frac{1}{2} + \sqrt{\frac{5}{4}})$, $3(\frac{1}{2} - \sqrt{\frac{5}{4}})$

Y-intercept: 0

X-Values of Critical Points: -1,3

X-Values of Inflection Points: 1

Intervals Where Decreasing: (-1, 3)

Intervals Where Increasing: $(-\infty, -1) \cup (3, \infty)$

Intervals Where Concave Up: $(1, \infty)$

Intervals Where Concave Down: $(-\infty, 1)$

Relative Minima: 3

Relative Maxima: -1

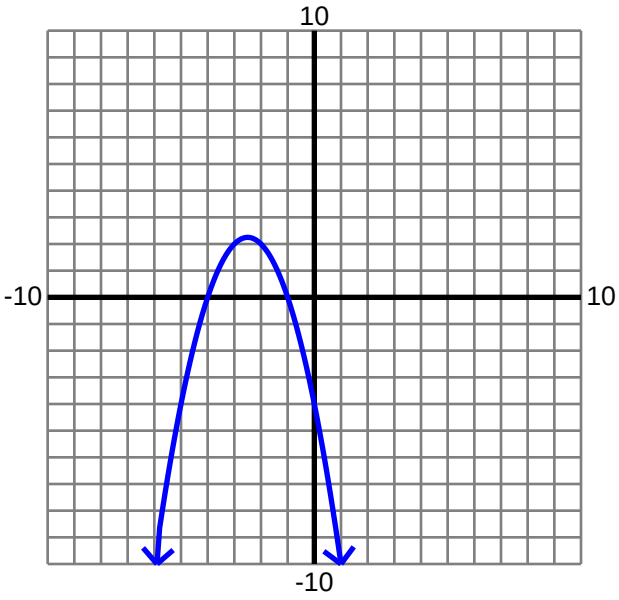
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

5) $f(x) = -x^2 - 5x - 4$



X-intercepts: -4,-1

Y-intercept: -4

X-Values of Critical Points: -2.5

X-Values of Inflection Points: None

Intervals Where Decreasing: (-2.5, ∞)

Intervals Where Increasing: (-∞, -2.5)

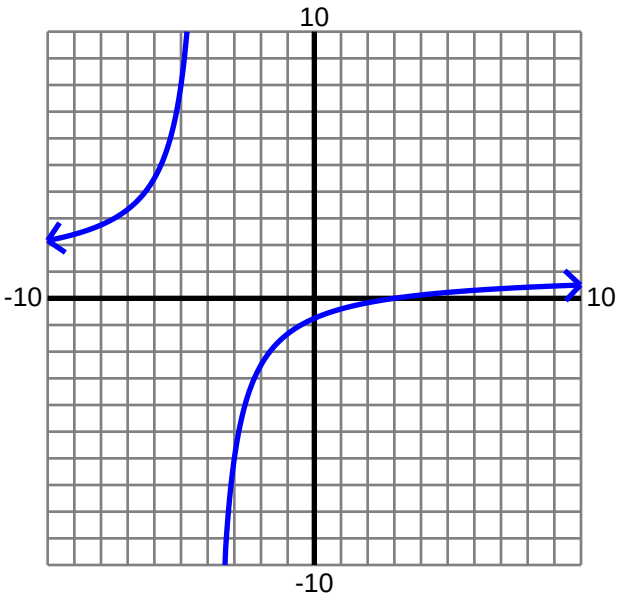
Intervals Where Concave Up: Never

Intervals Where Concave Down: Always

Relative Minima: None

Relative Maxima: -2.5

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



X-intercepts: 3

Y-intercept: $\frac{-3}{4}$

X-Values of Critical Points: None

X-Values of Inflection Points: None

Intervals Where Decreasing: Never

Intervals Where Increasing: Always

Intervals Where Concave Up: (-∞, -4)

Intervals Where Concave Down: (-4, ∞)

Relative Minima: None

Relative Maxima: None

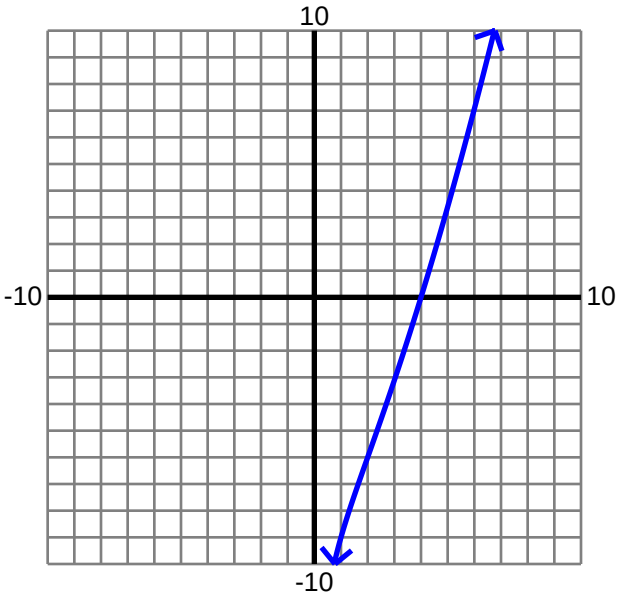
Name : _____ Score : _____

Teacher : _____ Date : _____

Graphing Functions

Fill in the properties of each function. Then, graph it.

7) $f(x) = \frac{x^2-4}{\sqrt{x}} - 6$



X-intercepts: 4

Y-intercept: None

X-Values of Critical Points: None

X-Values of Inflection Points: 2

Intervals Where Decreasing: Never

Intervals Where Increasing: (0, ∞)

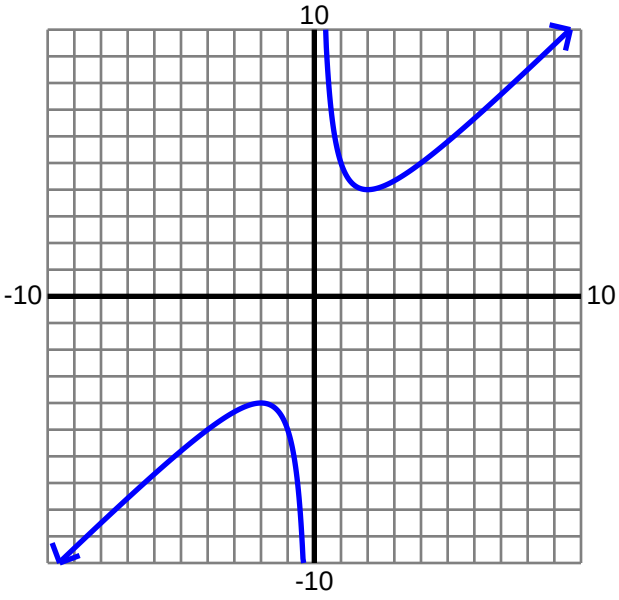
Intervals Where Concave Up: (2, ∞)

Intervals Where Concave Down: (0, 2)

Relative Minima: None

Relative Maxima: None

8) $f(x) = \frac{x^2+4}{x}$



X-intercepts: None

Y-intercept: None

X-Values of Critical Points: -2, 2

X-Values of Inflection Points: None

Intervals Where Decreasing: (-2, 0) ∪ (0, 2)

Intervals Where Increasing: (-∞, -2) ∪ (2, ∞)

Intervals Where Concave Up: (0, ∞)

Intervals Where Concave Down: (-∞, 0)

Relative Minima: 2

Relative Maxima: -2