SM2H

Name:_____ Period:_____

1.3 Analyzing Functions #2 2019-20

Find the intercepts (x and y) using algebra. Show all your work. Write your answers as ordered pairs.

1. $f(x)=3x-6$

2. $f(x)=-x+3$

3. $f(x)=-2x-9$

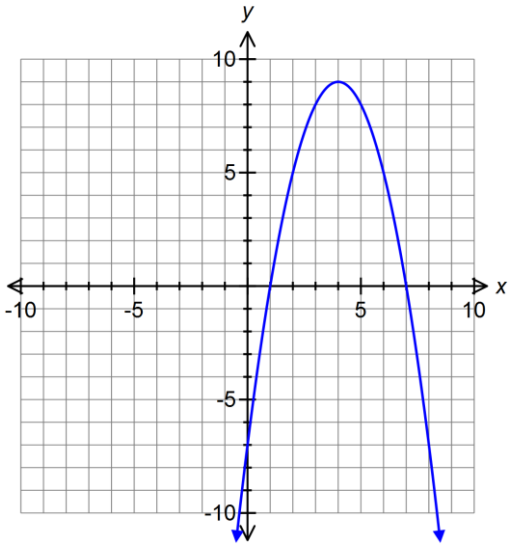
4. $y=\frac{2}{3}x+8$

5. $-3x+7y=6$

6. $-2x+5y=-15$

Fill in all requested information for each function. If something is not applicable to the graph, write N/A.

7. $f(x)=-x^2+8x-7$



x-intercept(s):_____ *y*-intercept:_____

Relative Maximum Point:_____

Relative Maximum Value:_____

Relative Minimum Point:_____

Relative Minimum Value:_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point:_____Value: _____

Positive:_____ Negative:_____

Increasing:_____Decreasing:_____

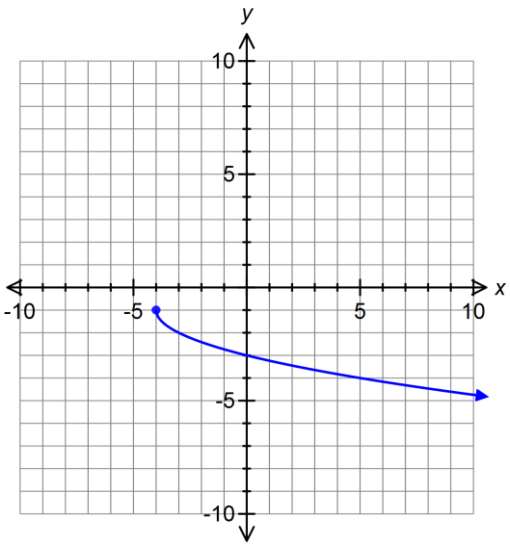
Constant:_____

Left End Behavior: $\lim_{x\to-\infty} f(x)=$ _____

Right End Behavior: $\lim_{x\to\infty} f(x)=$ _____

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

x-intercept(s):_____ *y*-intercept:_____



Relative Maximum Point:_____

Relative Maximum Value:_____

Relative Minimum Point:_____

Relative Minimum Value:_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point:_____Value: _____

Positive:_____ Negative:_____

Increasing:_____Decreasing:_____

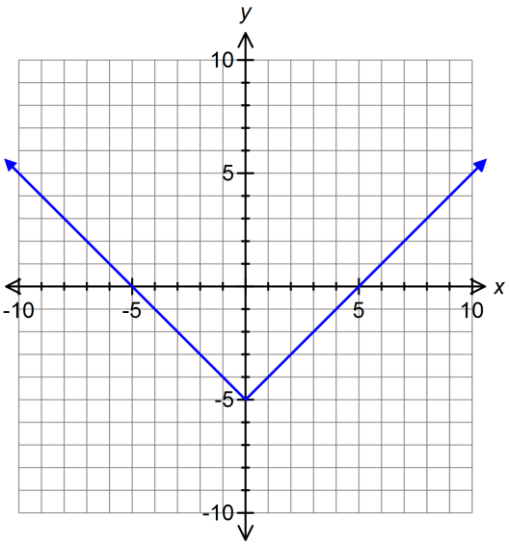
Constant:_____

Left End Behavior: $\lim_{x \to -\infty} f(x) =$ _____

Right End Behavior: $\lim_{x \to \infty} f(x) =$ _____

9. $g(x) = |x| - 5$

x-intercept(s):_____ *y*-intercept:_____



Relative Maximum Point:_____

Relative Maximum Value:_____

Relative Minimum Point:_____

Relative Minimum Value:_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point:_____Value: _____

Positive:_____ Negative:_____

Increasing:_____Decreasing:_____

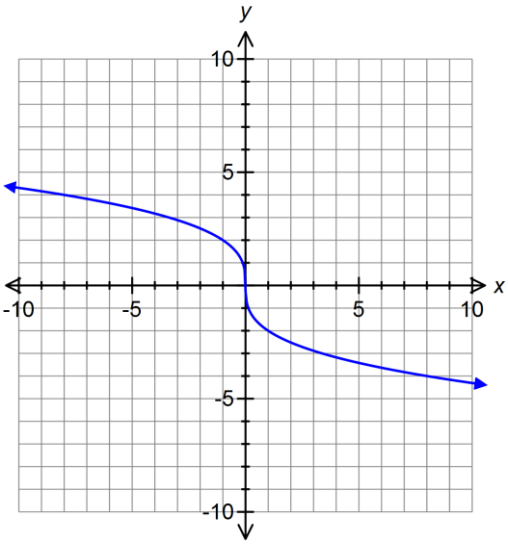
Constant:_____

Left End Behavior: $\lim_{x \to -\infty} f(x) =$ _____

Right End Behavior: $\lim_{x \to \infty} f(x) =$ _____

10. $g(x) = -2\sqrt[3]{x} = -2x^{\frac{1}{3}}$

x-intercept(s):_____ *y*-intercept:_____



Relative Maximum Point:_____

Relative Maximum Value:_____

Relative Minimum Point:_____

Relative Minimum Value:_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point:_____Value: _____

Positive:_____ Negative:_____

Increasing:_____Decreasing:_____

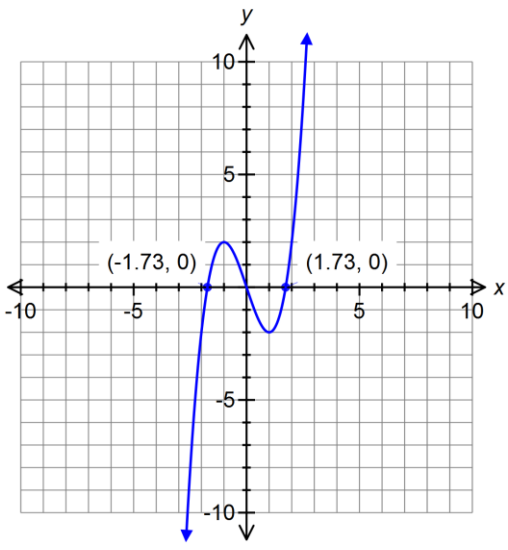
Constant:_____

Left End Behavior: $\lim_{x\to-\infty} f(x) =$ _____

Right End Behavior: $\lim_{x\to\infty} f(x) =$ _____

11. $h(x) = x^3 - 3x$

x-intercept(s):_____ *y*-intercept:_____



Relative Maximum Point:_____

Relative Maximum Value:_____

Relative Minimum Point:_____

Relative Minimum Value:_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point:_____ Value: _____

Positive:_____ Negative:_____

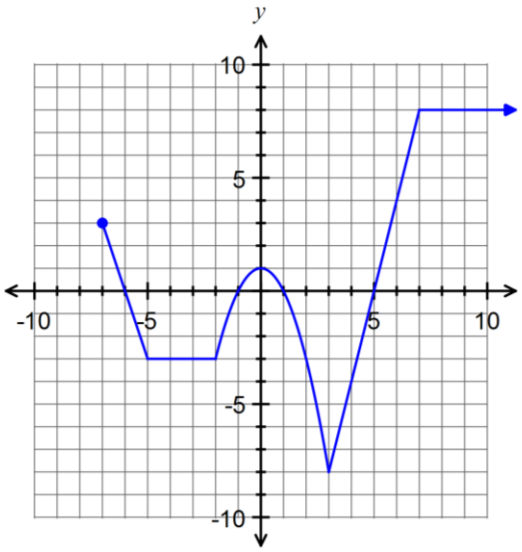
Increasing:_____Decreasing:_____

Constant:_____

Left End Behavior: $\lim_{x\to-\infty} f(x) =$ _____

Right End Behavior: $\lim_{x\to\infty} f(x) =$ _____

12. $f(x)=\begin{cases} -3x-18 & \text{if } -7\le x<-5 \\ -3 & \text{if } -5\le x<-2 \\ -x^2+1 & \text{if } -2\le x<3 \\ 4x-20 & \text{if } 3\le x<7 \\ 8 & \text{if } x\ge 7 \end{cases}$



x-intercept(s):_____ *y*-intercept:_____

Relative Maximum Points:_____

Relative Maximum Values:_____

Relative Minimum Points:_____

Relative Minimum Values:_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point: _____Value: _____

Positive:_____ Negative:_____

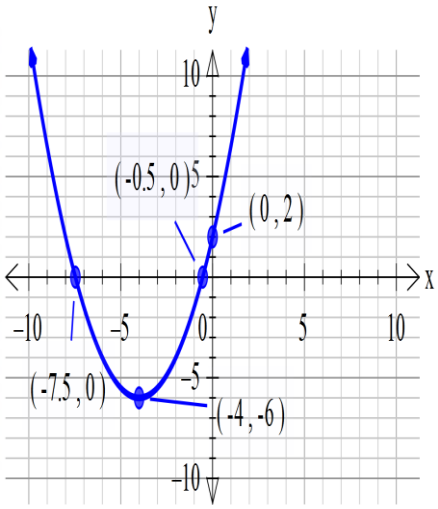
Increasing:_____ Decreasing:_____

Constant:_____

Left End Behavior: $\lim_{x\to-\infty} f(x) =$ _____

Right End Behavior: $\lim_{x\to\infty} f(x) =$ _____

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



Domain:_____ Range:_____

x-intercept(s):_____ *y*-intercept:_____

Relative Maximum Points:_____

Relative Maximum Values:_____

Relative Minimum Points:_____

Relative Minimum Values:_____

Absolute Maximum Point:_____Value:_____

Absolute Minimum Point:_____Value: _____

Positive:_____ Negative:_____

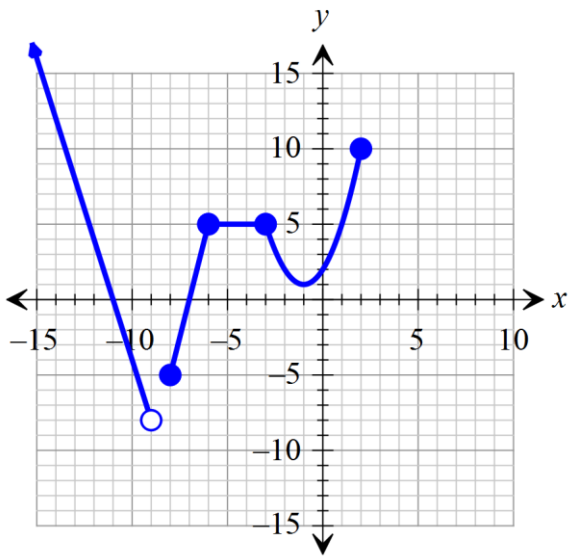
Increasing:_____ Decreasing:_____

Constant:_____ Symmetry: _____

Left End Behavior:

Right End Behavior:

14.



Domain:_____ Range:_____

x-intercept(s):_____ *y*-intercept:_____

Relative Maximum Points:_____

Relative Maximum Values:_____

Relative Minimum Points:_____

Relative Minimum Values:_____

Absolute Maximum Point:_____ Value:_____

Absolute Minimum Point:_____ Value: _____

Positive:_____ Negative:_____

Increasing: _____ Decreasing:_____

Constant:_____ Symmetry: _____

Left End Behavior: $\lim_{x\to-\infty} f(x) =$ _____

Right End Behavior: $\lim_{x\to\infty} f(x) =$ _____

Simplify **without using a calculator**. You must show your work.

15. $\frac{3}{4} + \frac{5}{8} =$

16. $\frac{2}{3x} + \frac{1}{x} =$

17. $\frac{5x}{4} \cdot \frac{2}{5y} =$

18. $\frac{2}{x} + \frac{1}{6x} =$

19. $\frac{2}{3x} \cdot \frac{6x}{5} =$

20. $\frac{5}{x} - \frac{1}{x} =$