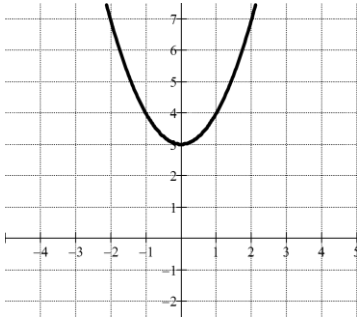


Name \_\_\_\_\_ Period \_\_\_\_\_

### Precalculus: Functions Review WS-1

Answer all of the following questions for each of the 6 functions. Be specific on the extrema. Indicate if it's an absolute or relative max or min.

1.



Domain: \_\_\_\_\_

extrema: \_\_\_\_\_

Range: \_\_\_\_\_

asymptotes: \_\_\_\_\_

continuity: \_\_\_\_\_

x-intercepts: \_\_\_\_\_

boundedness: \_\_\_\_\_

y-intercepts: \_\_\_\_\_

increasing: \_\_\_\_\_

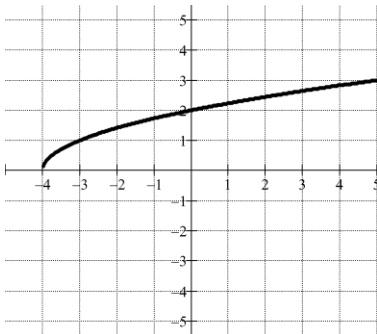
symmetry (even/odd): \_\_\_\_\_

decreasing: \_\_\_\_\_

End behavior:

$$\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$$

2.



Domain: \_\_\_\_\_

extrema: \_\_\_\_\_

Range: \_\_\_\_\_

asymptotes: \_\_\_\_\_

continuity: \_\_\_\_\_

x-intercepts: \_\_\_\_\_

boundedness: \_\_\_\_\_

y-intercepts: \_\_\_\_\_

increasing: \_\_\_\_\_

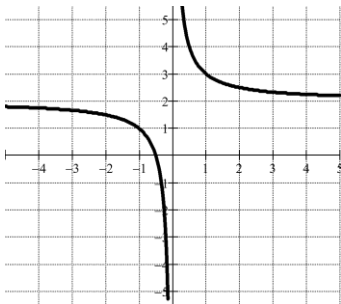
symmetry (even/odd): \_\_\_\_\_

decreasing: \_\_\_\_\_

End behavior:

$$\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$$

3.



Domain: \_\_\_\_\_

extrema: \_\_\_\_\_

Range: \_\_\_\_\_

asymptotes: \_\_\_\_\_

continuity: \_\_\_\_\_

x-intercepts: \_\_\_\_\_

boundedness: \_\_\_\_\_

y-intercepts: \_\_\_\_\_

increasing: \_\_\_\_\_

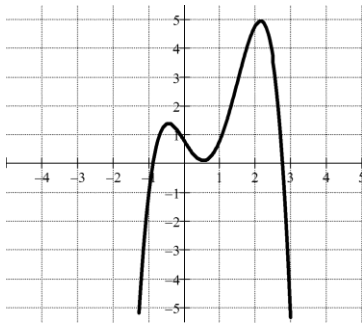
symmetry (even/odd): \_\_\_\_\_

decreasing: \_\_\_\_\_

End behavior:

$$\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$$

4.



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

continuity: \_\_\_\_\_

boundedness: \_\_\_\_\_

increasing: \_\_\_\_\_

decreasing: \_\_\_\_\_

extrema: \_\_\_\_\_

asymptotes: \_\_\_\_\_

x-intercepts: \_\_\_\_\_

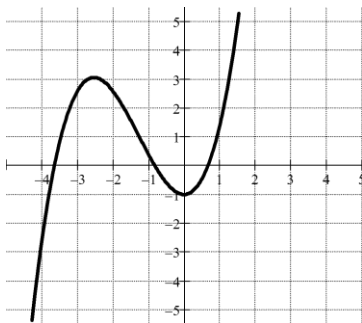
y-intercepts: \_\_\_\_\_

symmetry (even/odd): \_\_\_\_\_

End behavior:

$$\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$$

5.



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

continuity: \_\_\_\_\_

boundedness: \_\_\_\_\_

increasing: \_\_\_\_\_

decreasing: \_\_\_\_\_

extrema: \_\_\_\_\_

asymptotes: \_\_\_\_\_

x-intercepts: \_\_\_\_\_

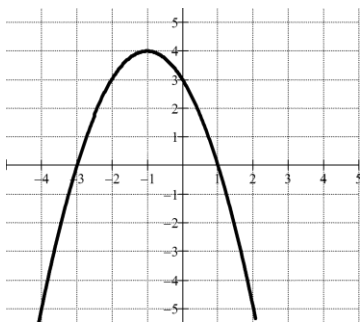
y-intercepts: \_\_\_\_\_

symmetry (even/odd): \_\_\_\_\_

End behavior:

$$\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$$

6.



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

continuity: \_\_\_\_\_

boundedness: \_\_\_\_\_

increasing: \_\_\_\_\_

decreasing: \_\_\_\_\_

extrema: \_\_\_\_\_

asymptotes: \_\_\_\_\_

x-intercepts: \_\_\_\_\_

y-intercepts: \_\_\_\_\_

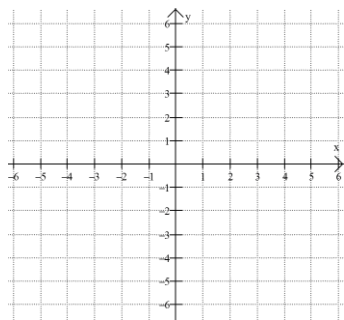
symmetry (even/odd): \_\_\_\_\_

End behavior:

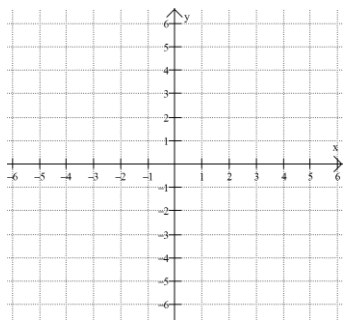
$$\lim_{x \rightarrow \infty} f(x) = \underline{\hspace{2cm}} \quad \lim_{x \rightarrow -\infty} f(x) = \underline{\hspace{2cm}}$$

Graph the following functions. Make sure your graphs are drawn clearly.

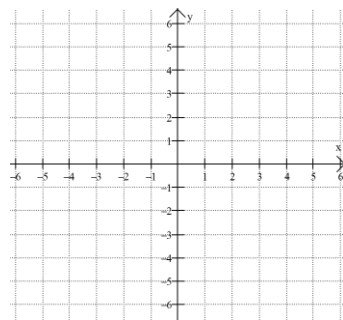
7.  $y = x^2 + 3$



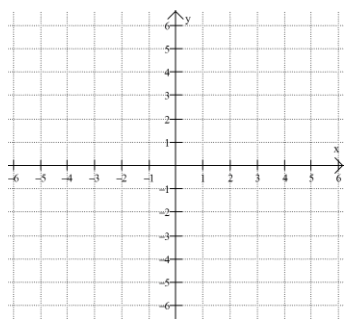
8.  $y = |-x| - 1$



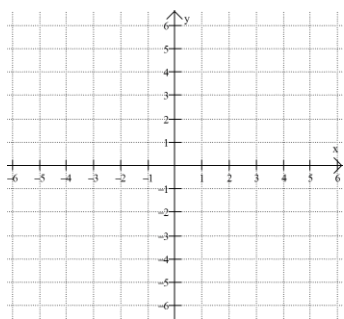
9.  $y = \frac{1}{x-2}$



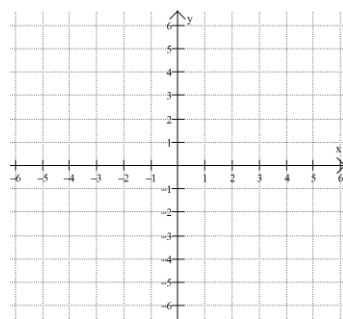
10.  $y = -2(x+1)^2 + 3$



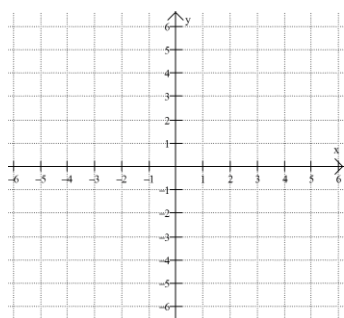
11.  $y = -\sqrt{x-4}$



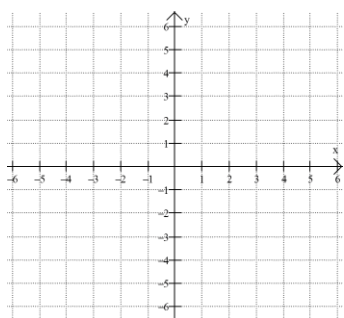
12.  $y = (x-4)^3$



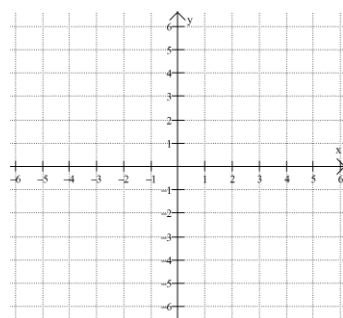
13.  $y = \sqrt{x+2} - 3$



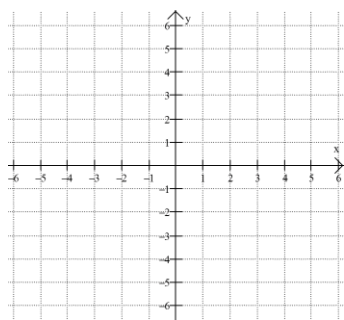
14.  $y = (x-2)^3$



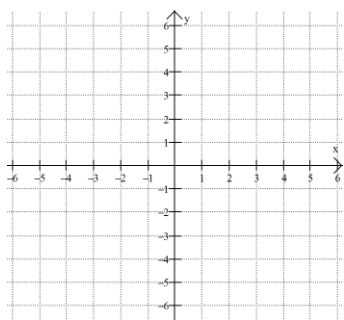
15.  $y = 3x + 5$



16.  $y = |x-4| + 2$



17.  $y = \frac{1}{2}x^2$



18.  $y = x^3 + 2$

