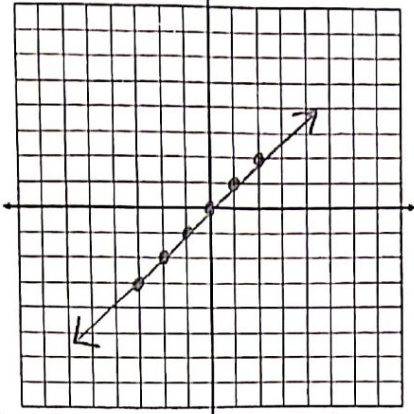


*at least 3 pts!

Key

Linear

Parent Function: $y = x$



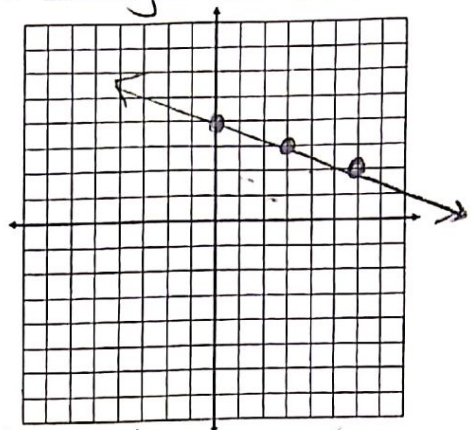
Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$

Increasing: $(-\infty, \infty)$ Decreasing: none
End Behavior: Even/Odd

$\lim_{x \rightarrow \infty} f(x) = \infty$ $\lim_{x \rightarrow -\infty} f(x) = \infty$

Local Minimum: none Local Maximum: none

Example: $y = -\frac{1}{3}x + 4$



Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$

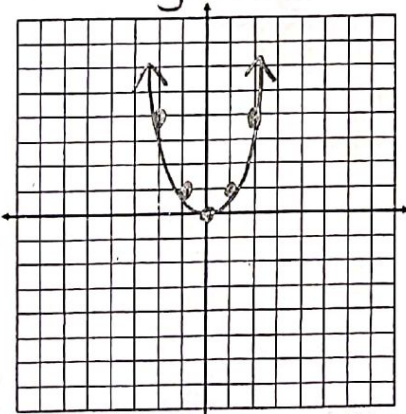
Increasing: none Decreasing: $(-\infty, \infty)$
End Behavior: Even/Odd

$\lim_{x \rightarrow \infty} f(x) = -\infty$ $\lim_{x \rightarrow -\infty} f(x) = \infty$

Local Minimum: none Local Maximum: none

Quadratic

Parent Function: $y = x^2$



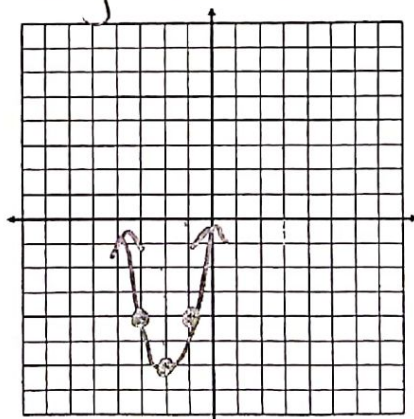
Domain: $(-\infty, \infty)$ Range: $[0, \infty)$

Increasing: $(0, \infty)$ Decreasing: $(-\infty, 0)$
End Behavior: Even/Odd

$\lim_{x \rightarrow \infty} f(x) = \infty$ $\lim_{x \rightarrow -\infty} f(x) = \infty$

Local Minimum: $(0, 0)$ Local Maximum: none

Example: $y = 2x^2 + 8x + 2$



Domain: $(-\infty, \infty)$ Range: $[-6, \infty)$

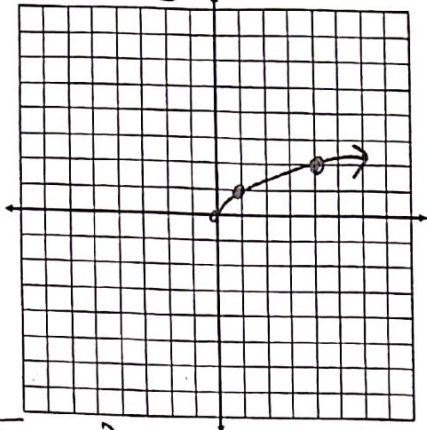
Increasing: $(-2, \infty)$ Decreasing: $(-\infty, -2)$
End Behavior: Even/Odd

$\lim_{x \rightarrow \infty} f(x) = \infty$ $\lim_{x \rightarrow -\infty} f(x) = \infty$

Local Minimum: $(-2, -6)$ Local Maximum: none

•Square Root•

Parent Function: $y = \sqrt{x}$



Domain: $[0, \infty)$ Range: $[0, \infty)$

Increasing: $(0, \infty)$ Decreasing: none

End Behavior:

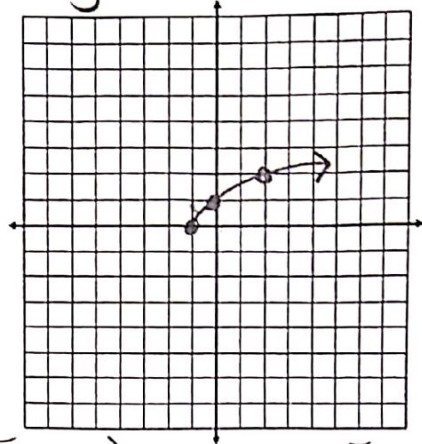
$$\lim_{x \rightarrow \infty} f(x) = \infty$$

Even/Odd

neither

Local Minimum: none Local Maximum: none

Example: $y = \sqrt{x+1}$



Domain: $[-1, \infty)$ Range: $[0, \infty)$

Increasing: $(-1, \infty)$ Decreasing: none

End Behavior:

$$\lim_{x \rightarrow \infty} f(x) = \infty$$

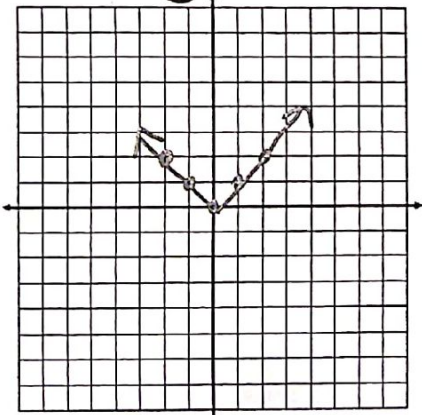
Even/Odd

neither

Local Minimum: none Local Maximum: none

•Absolute Value

Parent Function: $y = |x|$



Domain: $(-\infty, \infty)$ Range: $[0, \infty)$

Increasing: $(0, \infty)$ Decreasing: $(-\infty, 0)$

End Behavior:

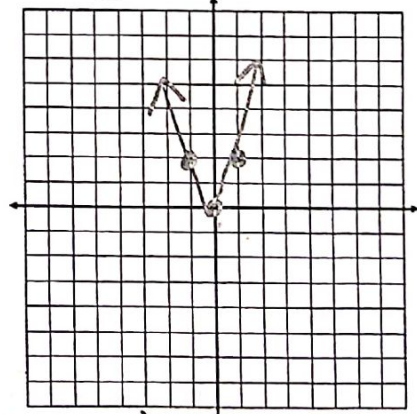
$$\lim_{x \rightarrow \infty} f(x) = \infty$$

$$\lim_{x \rightarrow -\infty} f(x) = +\infty$$

Even/Odd

Local Minimum: $(0, 0)$ Local Maximum: none

Example: $y = 2|x|$



Domain: $(-\infty, \infty)$ Range: $[0, \infty)$

Increasing: $(0, \infty)$ Decreasing: $(-\infty, 0)$

End Behavior:

$$\lim_{x \rightarrow \infty} f(x) = \infty$$

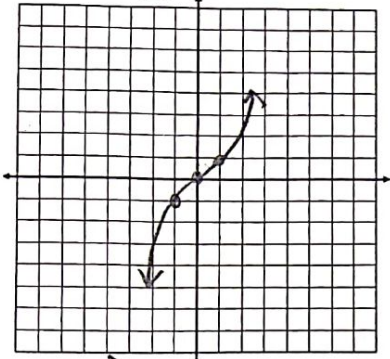
$$\lim_{x \rightarrow -\infty} f(x) = +\infty$$

Even/Odd

Local Minimum: $(0, 0)$ Local Maximum: none

Cubic

Parent Function: $y = x^3$



Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$

$(-\infty, 0) \cup (0, \infty)$

Increasing: Decreasing: none

End Behavior:

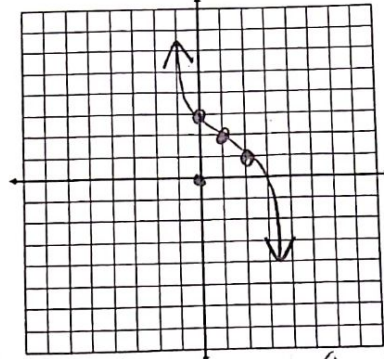
$\lim_{x \rightarrow \infty} f(x) = \infty$

$\lim_{x \rightarrow -\infty} f(x) = -\infty$

Even/Odd

Local Minimum: none Local Maximum: none

Example: $-(x-1)^3 + 2$



Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$

$(-\infty, 1) \cup (1, \infty)$

Increasing: none Decreasing:

End Behavior:

$\lim_{x \rightarrow \infty} f(x) = -\infty$

$\lim_{x \rightarrow -\infty} f(x) = \infty$

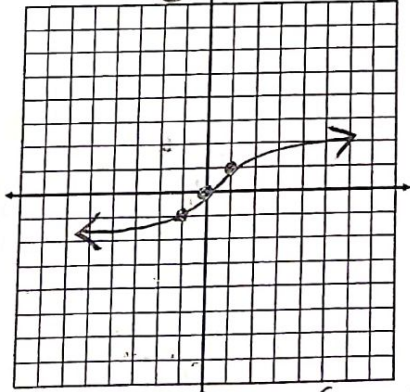
Even/Odd

Neither

Local Minimum: none Local Maximum: none

Cube Root

Parent Function: $y = \sqrt[3]{x}$



Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$

$(-\infty, 0) \cup (0, \infty)$

Increasing: Decreasing: none

End Behavior:

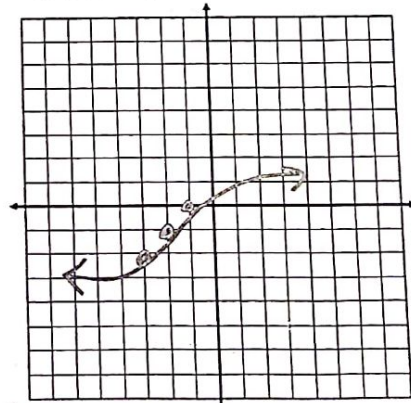
$\lim_{x \rightarrow \infty} f(x) = \infty$

$\lim_{x \rightarrow -\infty} f(x) = -\infty$

Even/Odd

Local Minimum: none Local Maximum: none

Example: $\sqrt[3]{x+2} - 1$



Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$

Increasing: $(-\infty, -2) \cup (-2, \infty)$

Decreasing: none

End Behavior:

$\lim_{x \rightarrow \infty} f(x) = \infty$

$\lim_{x \rightarrow -\infty} f(x) = -\infty$

Even/Odd

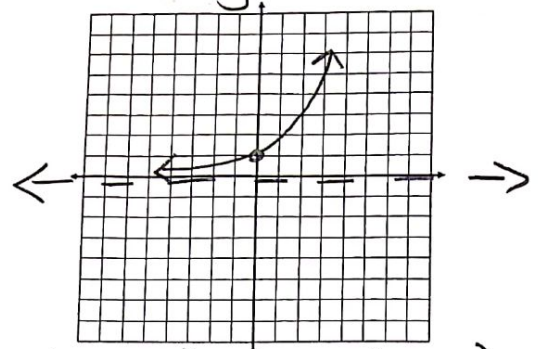
Neither

Local Minimum: none Local Maximum: none

Exponential

OR $y = 2^x$

Parent Function: $y = e^x$



Domain: $(-\infty, \infty)$ Range: $(0, \infty)$

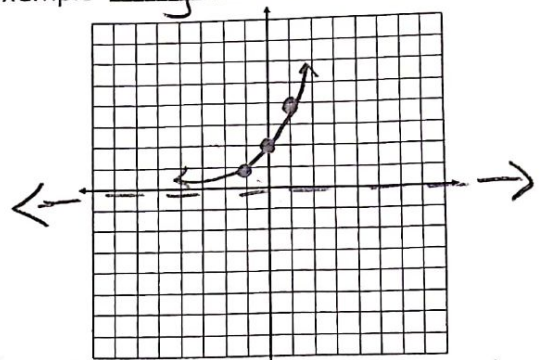
Increasing: $(-\infty, \infty)$ Decreasing: none

End Behavior: Even/Odd
neither

$\lim_{x \rightarrow \infty} f(x) = \infty$ $\lim_{x \rightarrow -\infty} f(x) = 0$

Local Minimum: none Local Maximum: none

Example: $y = 2^{x+1}$



Domain: $(-\infty, \infty)$ Range: $(0, \infty)$

Increasing: $(-\infty, \infty)$ Decreasing: none

End Behavior: Even/Odd
neither

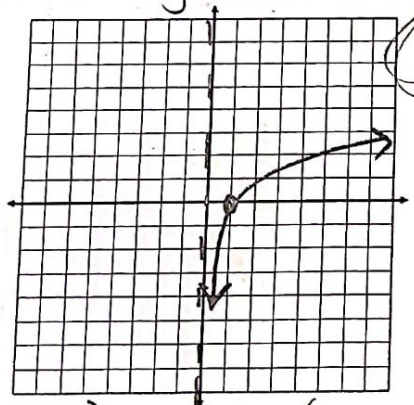
$\lim_{x \rightarrow \infty} f(x) = \infty$ $\lim_{x \rightarrow -\infty} f(x) = 0$

Local Minimum: none Local Maximum: none

Logarithmic

Parent Function: $y = \ln x$ OR

$y = \log_2 x$



Domain: $(0, \infty)$ Range: $(-\infty, \infty)$

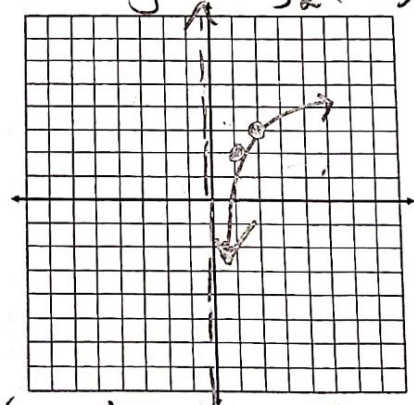
Increasing: $(-\infty, \infty)$ Decreasing: none

End Behavior: Even/Odd
neither

$\lim_{x \rightarrow \infty} f(x) = \infty$

Local Minimum: none Local Maximum: none

Example: $y = \log_2(2x) + 1$



Domain: $(0, \infty)$ Range: $(-\infty, \infty)$

Increasing: $(0, \infty)$ Decreasing: none

End Behavior: Even/Odd
neither

$\lim_{x \rightarrow \infty} f(x) = \infty$

Local Minimum: none Local Maximum: none