

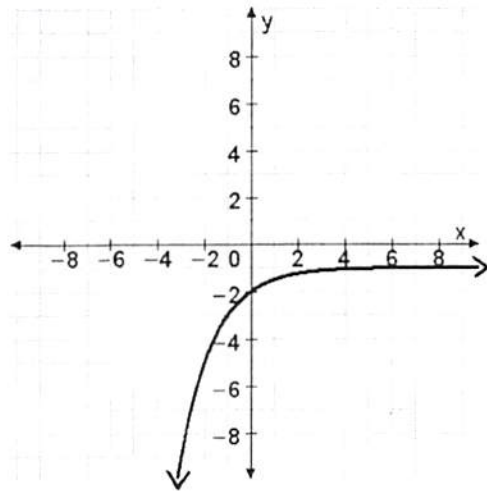
Characteristics of Functions Practice Worksheet

Name Key Class Period _____

Write the equation for the line, and determine the key features of this function.

Graph	Domain & Range	Intercepts	Maximum or Minimum	Intervals of Increase & Decrease	Asymptote
1. $y = \frac{1}{3}x + 1$ 	Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$	X: $(-3, 0)$ Y: $(0, 1)$	None	Interval of Increase $(-\infty, \infty)$	None
2. $y = -2x - 6$ 	Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$	X: $(-3, 0)$ Y: $(0, -6)$	None	Interval of Decrease $(-\infty, \infty)$	None
3. $y = 2(3)^x$ 	Domain: $(-\infty, \infty)$ Range: $(0, \infty)$	X: None Y: $(0, 2)$	None	Interval of Increase $(-\infty, \infty)$	$y = 0$
4. $y = 2(\frac{1}{2})^x$ 	Domain: $(-\infty, \infty)$ Range: $(0, \infty)$	X: None Y: $(0, 2)$	None	Interval of Decrease $(-\infty, \infty)$	$y = 0$

5.
 Domain $(-\infty, \infty)$
 Range $(-\infty, -1)$
 Minimum None
 Maximum None
 Interval of Increase $(-\infty, \infty)$
 Interval of Decrease None
 Zeros/x-intercepts None
 Y-intercept $(0, -2)$
 End-Behavior Left As $x \rightarrow -\infty, y \rightarrow -\infty$
 Right As $x \rightarrow +\infty, y \rightarrow -1$



Use the information to sketch a function.

6. Domain: all real numbers

Range: $y \geq 1$

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

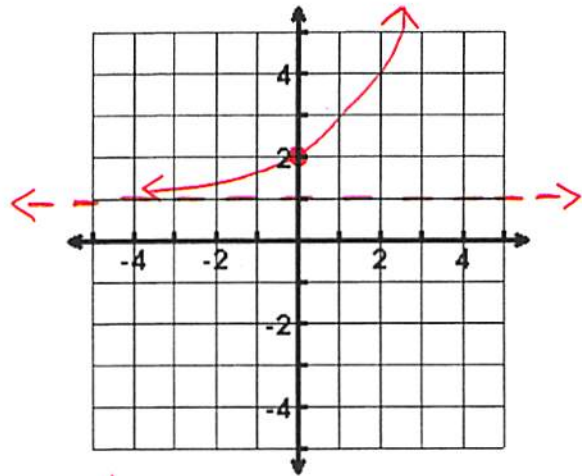
Decreasing: None

Y-Intercept $(0, 2)$

Asymptote: $y = 1$

Min/Max: None

End Behavior: $x \rightarrow \infty, f(x) \rightarrow +\infty$ $x \rightarrow -\infty, f(x) \rightarrow 1$



Use the information to sketch a quadratic.

7. Domain: $-\infty < x < \infty$

Range: $-\infty < x \leq 4$

Zero: $(3, 0)$

Y-intercept: $(0, 4)$

Increasing: $(-\infty, 0)$

Decreasing: $(0, \infty)$

Asymptote: None

Min/Max: $(0, 4)$

End Behavior: $x \rightarrow \infty, f(x) \rightarrow -\infty$ $x \rightarrow -\infty, f(x) \rightarrow -\infty$

