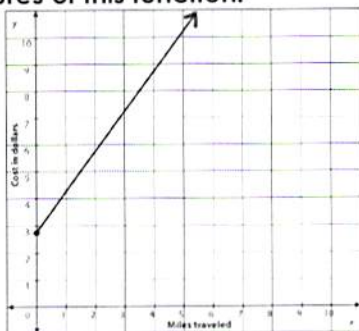


## Extra Practice on Characteristics of Functions

Name Key

Class Period \_\_\_\_\_

1. A taxi company in Atlanta charges \$2.75 per ride plus \$1.50 for every mile driven. Write the equation for the line, and determine the key features of this function.



Equation:  $y = 1.50x + 2.75$

Discrete or Continuous: Continuous

Domain:  $[0, \infty)$

Range:  $[2.75, \infty)$

x-intercept: None

y-intercept:  $(0, 2.75)$

Increasing or Decreasing: Increasing

Max or Min: min at  $(0, 2.75)$

2. A pendulum swings to 90% of its height on each swing and starts at a height of 80 cm. The height of the pendulum in centimeters,  $y$ , is recorded after  $x$  number of swings. Write the equation, and determine the key features of this function.

Number of swings ( $x$ )	Height in cm ( $y$ )
0	80
1	72
2	64.8
3	58.32
5	47.24
10	27.89
20	9.73
40	1.18
60	0.14
80	0.02

Equation: \_\_\_\_\_

Discrete or Continuous: Discrete

Domain: X-values listed in table

Range: y-values listed in table

x-intercept: None

y-intercept:  $(0, 80)$

Increasing or Decreasing: Decreasing

Max or Min: max at  $(0, 80)$  + min at  $(80, 0.02)$

3. The cost of an air conditioner is \$110. The cost to run the air conditioner is \$0.35 per minute. Write the equation, and determine the key features of this function.

Minutes ( $x$ )	Cost in dollars ( $f(x)$ )
0	110.00
30	120.50
60	131.00
90	141.50
120	152.00

Equation:  $y = 0.35x + 110$

Discrete or Continuous: Continuous

Domain:  $[0, 120]$

Range:  $[110, 152]$

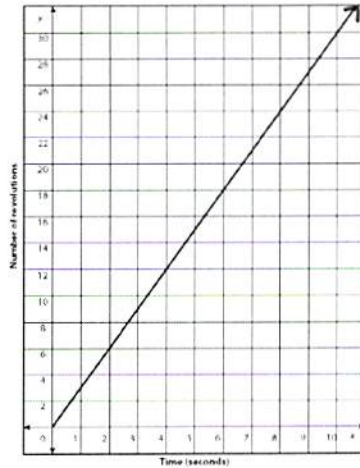
x-intercept: None

y-intercept:  $(0, 110)$

Increasing or Decreasing: Incr

Max or Min: min at  $(0, 110)$  + max at  $(120, 152)$

4. A gear on a machine turns at a rate of 3 revolutions per second. Write the equation, and determine the key features of this function.



Equation:  $y = 3x$

Domain:  $[0, \infty)$

x-intercept:  $(0,0)$

Increasing or Decreasing: Increasing

Discrete or Continuous: Continuous

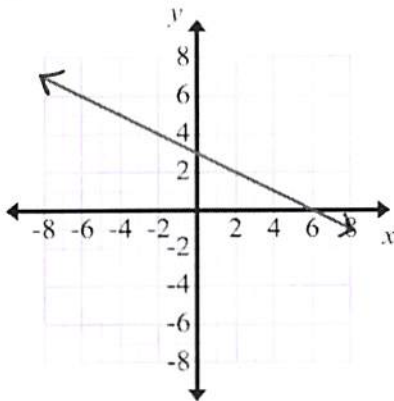
Range:  $[0, \infty)$

y-intercept:  $(0,0)$

Max or Min: min at (0,0)

5. Fill in the information for each graph.

a)



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

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

x-intercept:  $(6, 0)$

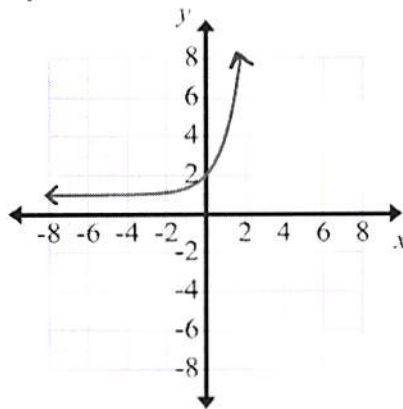
y-intercept:  $(0, 3)$

Increasing / Decreasing: Decreasing

Max or Min: None

Asymptote: None

b)



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

Range:  $(1, \infty)$

x-intercept: None

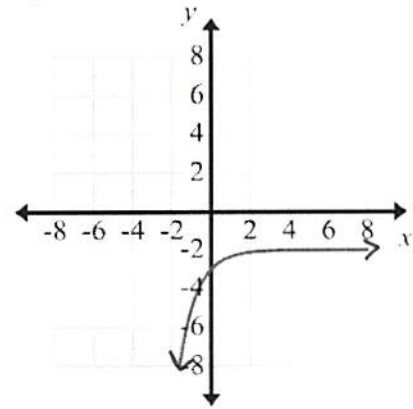
y-intercept:  $(0, 2)$

Increasing / Decreasing: Increasing

Max or Min: None

Asymptote:  $y = 1$

c)



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

Range:  $(-\infty, -2)$

x-intercept: None

y-intercept:  $(0, -3)$

Increasing / Decreasing: Increasing

Max or Min: None

Asymptote:  $y = -2$