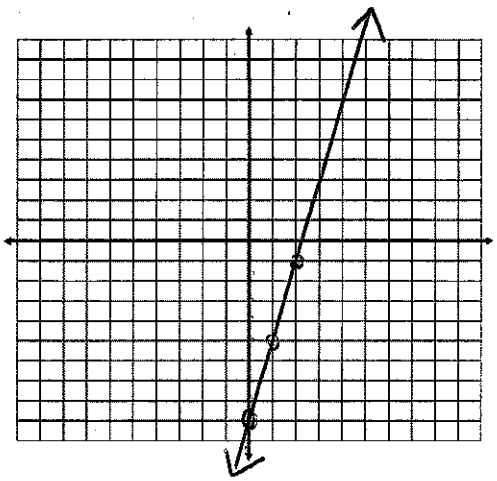
Algebra I
Learning Check – Characteristics of Linear Functions

Name Answer Key
Date

1. Graph the line! Example: **y = 4x - 9**

1. Plot the y-intercept
2. From there, RISE & RUN
3. Draw line



Match the characteristics of linear functions:

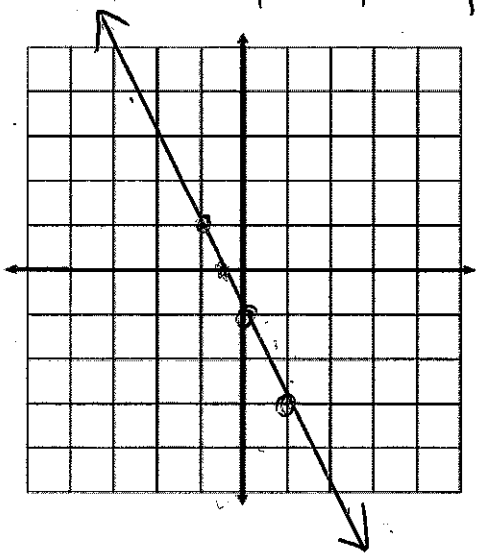
2. H - the slope of a function
3. A - the set of x-values for a function
4. C - the set of y-values for a function
5. E - the interval where the graph rises and the y-values increase
6. B - the interval where the graph falls and the y-values decrease
7. D - the point(s) where a graph crosses the x-axis
8. G - the point(s) where a graph crosses the y-axis
9. F - the behavior of the graph as x approaches positive infinity (up) or negative infinity (down).

A. Domain
B. Decreasing Interval
C. Range
D. X-Intercept
E. Increasing Interval
F. End Behavior
G. Y-Intercept
H. Rate of Change

10. Graph
-2x - y = 1

$\frac{-y}{-1} = \frac{2x}{-1} + \frac{1}{-1}$

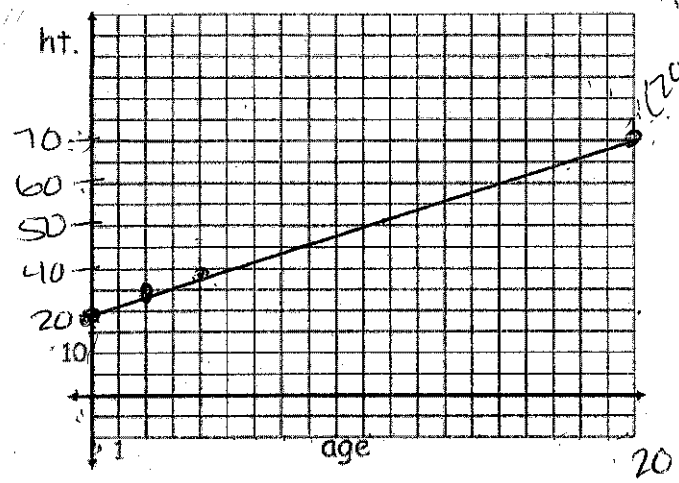
$y = -2x - 1$



Characteristic	Answer
Rate of Change	-2
Domain	$(-\infty, \infty)$
Range	$(-\infty, \infty)$
Increasing Interval	(DNE)
Decreasing Interval	$(-\infty, \infty)$
x-intercept	$(-1/2, 0)$
y-intercept	$(0, -1)$
Left End Behavior	$x \to -\infty, y \to \infty$
Right End Behavior	$x \to \infty, y \to -\infty$

. Celeste marked her height growing up. She was born 20 in. tall and stopped growing at age 20 at 70 in. tall. Write a function for her height, depending on her age.

h(x) = $\frac{5}{2}x + 20$



Characteristic	Answer
Rate of Change	5/2
Domain	[0, 20]
Range	[20, 70]
Increasing Interval	~~[20, 70]~~ (0, 20)
Decreasing Interval	none
x-intercept	none or DNE
y-intercept	(0, 20)
Left End Behavior	DNE
Right End Behavior	$x \to 20$, $y \to 70$

(0,20) (20,70) $ROC = \frac{20-70}{0-20} = \frac{5}{2}$

Determine the rate of change for #12-15.

(-1,3)(3,11)

12. $f(x) = x^2 + 2$ for [-1, 3]

ROC: 2

$f(-1) = (-1)^2 + 2 = 3$

$f(3) = 11$

$\frac{11-3}{3+1} = \frac{8}{4} = 2$

13.

x	y
-5	10
-3	6
-1	2
1	-2
3	-6

+2 -4

$\frac{-4}{2}$

ROC: -2

14. (-6, 3) (8, 3)

ROC: 0

15. Determine the equation of the line given the ordered pairs. (might be helpful to find ROC). (-1, 3) (-1, 7) (-1, -2) (-1, -8)

$\frac{}{0}$ m=und.

Equation: X=-1