Name:

Date:

Period:

Math 1

Chapter Three Practice Test
Linear Functions

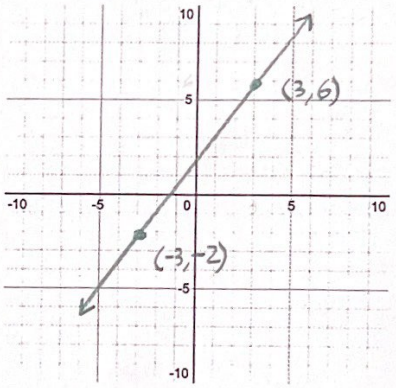
[A] Let point *A* be (3, 6) and let point *B* be (-3, -2).

1. Plot these two points and make a line.

2. Is the slope positive, negative, zero, or undefined?

positive

3. Calculate the slope of the line.



$$\text{slope} = \frac{y_1 - y_2}{x_1 - x_2} = \frac{6-(-2)}{3-(-3)}$$

$$= \frac{6+2}{3+3}$$

$$= \frac{8}{6}$$

$$\boxed{m = \frac{4}{3}}$$

4. Solve for the *y*-intercept of the line.

slope-intercept form is $y = mx + b$

(3,6)

$x=3$
$y=6$

$$y = \frac{4}{3}x + b$$

$$6 = \frac{4}{3}(3) + b$$

$$6 = 4 + b$$

$$-4 \quad -4$$

$$\boxed{2 = b}$$

5. What is the equation of the line?

$y = mx + b$ $\quad m = \frac{4}{3}$ $\quad b = 2$

$$\boxed{y = \frac{4}{3}x + 2}$$

[B] Let $b(x) = 2x^2 - 3x - 4$.

1. Evaluate $b(-3)$ and explain what it means.

$b(-3) = 2(-3)^2 - 3(-3) - 4$

$b(-3) = 2(9) + 9 - 4$

$b(-3) = 18 + 5$

$b(-3) = 23$

2. Using function notation, find two points on the graph.

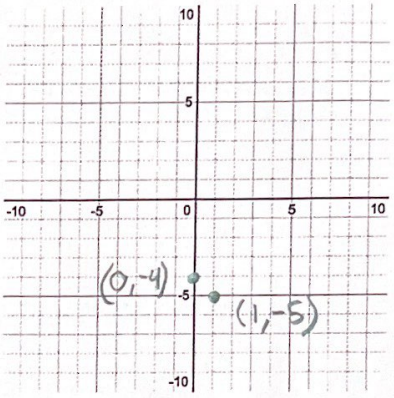
$b(-3) = 23$ so $(-3, 23)$

$b(0) = -4$ so $(0, -4)$

$b(1) = 2(1) - 3(1) - 4$

$b(1) = -5$

$(1, -5)$



3. Graph two points on the graph of b.

[C] Consider the line $4x - 3y = 18$.

1. Find the x-intercept of the line.

$y = 0$

$4x = 18$

$x = \frac{18}{4}$

$x = \frac{9}{2}$

2. Find the y-intercept of the line.

$x = 0$

$-3y = 18$

$y = -6$

3. Write the equation of the line in slope-intercept form.

solve for y

$4x - 3y = 18$

$-4x \quad -4x$

$\frac{-3y}{-3} = \frac{-4x}{-3} + \frac{18}{-3}$

$y = \frac{4}{3}x - 6$

$(0, -6) \quad m = \frac{4}{3}$

4. Graph the line.