6. Find the point-slope form of the equation of the line with slope -2 that goes through the point $(5, 4)$. 1 / 1 point

- (●) $y - 4 = -2(x - 5)$
- ( ) $y - 4 = 2(x - 5)$
- ( ) $y - 5 = -2(x - 4)$
- ( ) $(5, 4)$

✓ **Correct**
The point-slope form for the equation of a line with slope m that goes through the point (x_0, y_0) is $y - y_0 = m(x - x_0)$.

In this case, the slope $m = -2$ is given and the point $(5, 4)$ on the line is given.

7. Which of the following equations is for a line with the same slope as $y = -3x + 2$? 1 / 1 point

- (●) $y = -3x - 8$
- ( ) $y = 5x + 2$
- ( ) $y = 8x - 3$
- ( ) $y = 5x$

✓ **Correct**
The slope-intercept formula for a line is $y = mx + b$, where m is the slope and b is the y-coordinate of the point where the line hits the y-axis.

This line has slope $m = -3$ which is the same slope as the given line.

8. Which of the following equations is for a line with the same y-intercept as $y = -3x + 2$? 1 / 1 point

- ( ) $y = 8x - 3$
- ( ) $y = 5x$
- (●) $y = 5x + 2$
- ( ) $y = -3x - 8$

✓ **Correct**
The the slope-intercept formula for a line is $y = mx + b$, where m is the slope and b is the y-coordinate of the point where the line hits the y-axis. This line has a y-intercept of 2 which is the same as the given line.

9. How many lines contain both the point $A = (1, 1)$ and the point $B = (2, 2)$? 1 / 1 point

- ( ) infinitely many
- (●) 1
- ( ) 2
- ( ) None

✓ **Correct**
The line with equation $y = x$ is the one and only line that meets the stated requirements.

10. Suppose that we have two sets, $A = \{a, b\}$ and $Z = \{x, y\}$. How many different functions $F : A \to Z$ are possible? 1 / 1 point

- ( ) There are none
- (●) 4
- ( ) 1
- ( ) There are infinitely many

✓ **Correct**
A function $F : A \to Z$ is a rule which assigns an element $F(a) \in Z$ to each element $a \in A$.

There are two elements in A; namely, a and b. For each of these elements, there are two assignment choices we could make: x and y.

Here are the four possible functions:

$F(a) = x, F(b) = y$, OR

$F(a) = y, F(b) = x$, OR

$F(a) = x, F(b) = x$, OR

$F(a) = y, F(b) = y$.

11. How many graphs contain both the point $A = (0, 0)$ and the point $B = (1, 1)$ 1 / 1 point