**Congratulations! You passed!**

**TO PASS** 75% or higher

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# Practice quiz on the Cartesian Plane

**TOTAL POINTS 5**

1. Which of the following points in the Cartesian Plane is on the $y$-axis? **1 / 1 point**

- $(5, 0)$
- $(1, 1)$
- $(-5, 0)$
- $(0, -5)$ ✓

**Correct**

The $y$-axis is defined to be all points in the Cartesian plane with zero as $x$-coordinate. The point $(0, -5)$ meets that requirement.

2. Find the distance between the points $A = (2, 2)$ and $C = (3, 3)$: **1 / 1 point**

- $0$
- $1$
- $2$
- $\sqrt{2}$ ✓

**Correct**

Recall that the distance between points $(a, b)$ and $(c, d)$ is $\sqrt{(c-a)^2 + (d-b)^2}$.

In this case $(a, b) = (2, 2)$ and $(c, d) = (3, 3)$, so the distance is $\sqrt{(3-2)^2 + (3-2)^2} = \sqrt{2}$.

3. Find the point-slope form of the equation of the line that goes between $A = (1, 1)$ and $B = (5, 3)$: **1 / 1 point**

- $y - 3 = \frac{1}{2}(x - 1)$
- $y = \frac{1}{2}x$
- $y - 1 = \frac{1}{2}(x - 5)$
- $y - 1 = \frac{1}{2}(x - 1)$ ✓

**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 $m = \dfrac{3-1}{5-1} = \dfrac{1}{2}$

We can choose either $A$ or $B$ for the point on the line, but in neither case do we get this chosen answer.

4. Which of the following points is on the line with equation: **1 / 1 point**

$y - 1 = 2(x - 2)$?

- $(2, 3)$
- $(0, 0)$
- $(3, 2)$
- $(2, 1)$ ✓

**Correct**

If we plug in $1$ for $y$ and $2$ for $x$ in the equation of the line, we make a true statement, 0 = 0, so this point lies on the line.

5. Suppose that a line $\ell$ has slope $2$ and goes through the point $(-1, 0)$. What is the $y$-intercept of $\ell$? **1 / 1 point**

- $0$
- $-1$
- $1$
- $2$ ✓

**Correct**

Recall that the $y$-intercept of $\ell$ is the $y$-coordinate of where $\ell$ hits the $y$-axis.

Since $(-1, 0) \in \ell$, the point on $\ell$ with $x = 0$ is obtained by running one unit from $(-1, 0)$ while rising two units.

This gives $y = 2$ as the $y$-intercept.