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Practice quiz on the Cartesian Plane

GESAMTPUNKTZAHL 5

1. Which of the following points in the Cartesian Plane is on the y-axis?   `1 / 1 Punkten`

   ○ $(1, 1)$

   ○ $(5, 0)$

   ○ $(-5, 0)$

   ✓ **Richtig**
   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 Punkten`

   ○ 1

   ○ 2

   ○ 0

   ◉ $\sqrt{2}$

   ✓ **Richtig**
   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 $\sqrt{(3 - 2)^2 + (3 - 2)^2} = \sqrt{2}$.

   ○ y-3 =\begin {align}\frac12(x-1)\end {align}

   ○ y - 1 =\begin {align} \frac12(x-1)\end {align}

   ○ y -1 = \begin {align} \frac12(x-5)\end {align}

   ◉ y = \begin {align}\frac12 x \end {align}

   ! **Falsch**
   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 = \begin {align} \frac{3-1}{5-1} = \frac12\end {align}

   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 Punkten`

   ○ $(3, 2)$

   ○ $(0, 0)$

   ○ $(2, 3)$

   ✓ **Richtig**
   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 ℓ has slope 2 and goes through the point $(-1, 0)$. What is the y-intercept of ℓ?   `1 / 1 Punkten`

   ○ -1

   ◉ 2

   ○ 0

   ○ 1

   ✓ **Richtig**
   Recall that the y-intercept of ℓ is the y-coordinate of where ℓ hits the y-axis.

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