

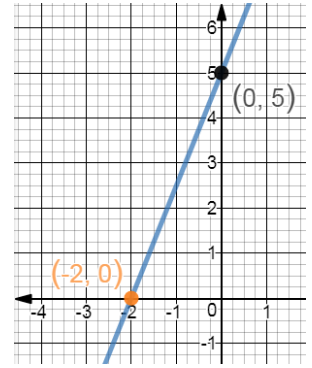
This book has permission to use the "N&K method of COLORS".

12) Question: 1st Method. Which of the following points, is on the line

$$2y = 5x + 10;$$

- A) (10,0)
- B) (0,2)
- C) (0,3)
- D) (0,5)

nw,nc



For speed, while solving something similar, only THINK the words in blue; WRITE only the words in other COLORS.

Given: 1) equation of a line.

$$2y = 5x + 10 \dots\dots\dots \text{equation \#1}$$

Solve: Which of the points given above, is on the line (eq #1)?

Road Map of Solution:

First Step: Draw the x and y axes in your work area.

Second Step: Find the point (x_1, y_1) , where the line (eq #1) crosses the "x-axis" and the point (x_2, y_2) , where the line (eq #1) crosses the "y-axis"

Third Step: Mark the points on the x-y coordinate system sketched above.

Draw the line representing eq #1 through (x_1, y_1) and (x_2, y_2) on the x-y coordinate system.

Fourth Step: Mark the points representing the 4 choices given above. Check, which point is coincident with the line drawn earlier.

First Step: Sketch the x and y axes in your work area. Done

Second Step: Find the point (x_1, y_1) , where the line (eq #1) crosses the "x-axis" and the point (x_2, y_2) , where the line (eq #1) crosses the "y-axis"

To find the point (x_1, y_1) , where the line (eq #1) crosses the "x-axis", substitute, " $y_1=0$ " in equation #1.

$$\begin{aligned}
 2y &= 5x + 10 \\
 \Rightarrow 2(0) &= 5x + 10 \\
 \Rightarrow 0 &= 5x + 10 \\
 \Rightarrow 0 - 10 &= 5x + 10 - 10 \\
 \Rightarrow -10 &= 5x + 10 - 10 \\
 \Rightarrow -10 &= 5x \\
 \Rightarrow \frac{1}{5}x \{ -10 \} &= \{ 5x \} \times \frac{1}{5} \\
 \Rightarrow \frac{1}{5}x \{ -10 \} &= \{ 5x \} \times \frac{1}{5} \\
 \Rightarrow \frac{1}{1}x \{ -2 \} &= \{ 1x \} \times \frac{1}{1} \\
 \Rightarrow 1x \{ -2 \} &= \{ 1x \} \times 1 \\
 \Rightarrow -2 &= x
 \end{aligned}$$

Therefore, (x_1, y_1) is equal to $(-2, 0)$.

Similarly, (x_2, y_2) is equal to $(0, 5)$. This point is the same as choice (D) above. Answer (D)

Third Step: Not needed. See answer above.

Fourth Step: Not needed. See answer above.

Click here to see the solution for slightly more complicated version of this problem