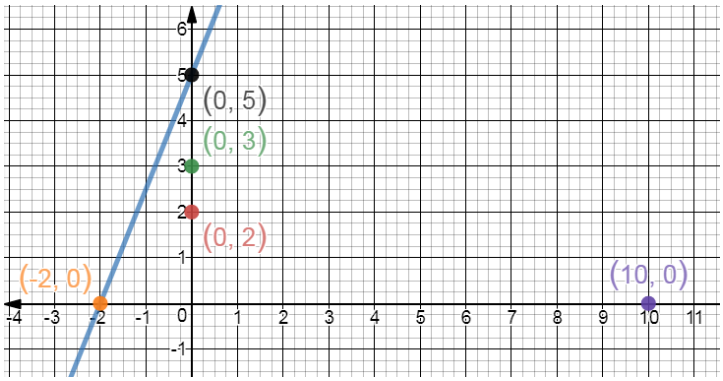
This book has permission to use the "N&K method of COLORS".

12) Question: 2nd 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) 2y = 5x + 3
Solve: Which of the choices given above is on the line?

Road Map of Solution:
First Step: Sketch the x and y axes in your work area.
Second Step: Convert the equation to form; $\mathbf{y = mx + b}$
Third Step: Based on the above equation, we know that b is the intercept on the y-axis.
Fourth Step:

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

Second Step: Convert the given equation to form;
$\mathbf{y = mx + b}$ ..... *equation #1*
The given equation is
$2y = 5x + 10$ ..... *equation #2*
To convert eq #1 to the form $\mathbf{y = mx + b}$ *, multiply both sides of the above equation with* $\frac{1}{2}$

$\left(\frac{1}{2}\right)\times \{2y\} = \{5x + 10\} \times\left(\frac{1}{2}\right)$

$\left(\frac{1}{2}\right)\times \quad \cancel{2}y = \frac{5}{2}x + \frac{\cancel{10}}{\cancel{2}}$

$\left(\frac{1}{1}\right)\times \quad 1y = \frac{5}{2}x + \frac{5}{1}$

$(1)\times \quad 1y = \frac{5}{2}x + 5$

$y = \frac{5}{2}x + 5$ ..... *equation #2b*

Comparing equation #s 1 & 2b, we get,
Slope $= \frac{\text{rise}}{\text{run}} = m = \frac{5}{2}$

Intercept = b = "y" value of the point, where the line defined by equation #1 crosses the y-axis.
..... *Since, the line defined by equation #1 crosses the y-axis at (0,5)*
Intercept = b = 5