Answer on Question #84181 – Math – Algebra

Question

Nolan plots a point at $(0, 3)$ on the y-axis. He uses a slope of 2 to graph another point. He draws a line through the two points. Which equation represents Nolan's line?

Solution

The slope-intercept form of the equation of a straight line is $y = mx + b$, where m is the slope, and b is the y-intercept. Because the point $(0, 3)$ is the only point that lies on the y-axis (the x-coordinate is zero), i. e. Nolan doesn't plot the second point on the y-axis since the real slope is used, the slope-intercept form can be applied here to write the required equation.
So, obviously, m is 2 and b is 3.
Thus,

$$y = 2x + 3 \text{ (slope-intercept form)}$$

or

$$y - 3 = 2(x - 0) \text{ (point-slope form)}$$

or

$$y - 2x = 3 \text{ (standard form)}$$