

U6D8_T Review

Thursday, April 26, 2018 10:33 AM

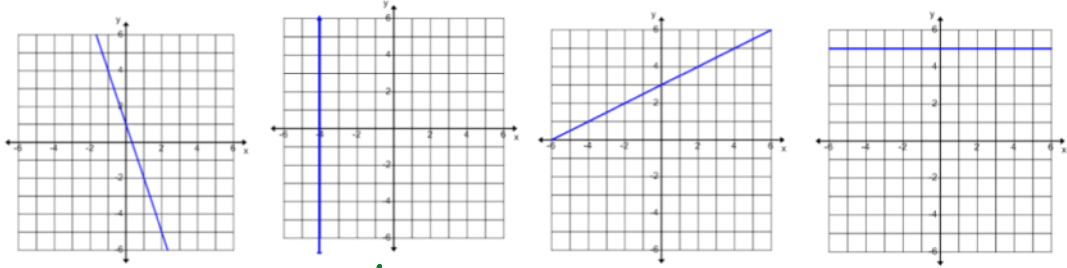


U6D8_T
Review

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Review

1. Identify the slope and the y intercept of the following lines (then write the equation of the line):



$m = -\frac{3}{1}$
 $b = 1$

no b
m is undefined

$b = 3$
 $m = \frac{1}{2}$

$b = 5$
 $m = 0$

2. Identify the slope and the y intercept of each of the following lines then graph the line:

a) $y = 2x - 3$

$b = -3$ $m = \frac{-2}{1}$

b) $y = -\frac{5}{6}x + 4$

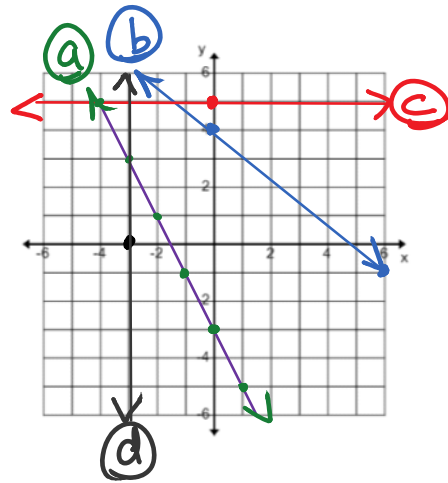
$b = 4$ $m = \frac{-5}{6}$

c) $y = 5$

$m = 0$
 $b = 5$

d) $x = -3$

no b
m is undefined



3. Identify which equation below is in standard form. Correct the equation if it is not in standard form.

a) $-3x + y - 4 = 0$
 No!

$3x - y + 4 = 0$

b) $2x - 3y + 4 = 0$
 Yes!

c) $0 = \frac{1}{3}x - 7$
 No!

$\frac{1}{3}x - 7 = 0$ $\nearrow \times 3$

$x - 21 = 0$

d) $y = \frac{2}{3}x + \frac{1}{5}$
 No!

LCD 15

$\frac{2}{3}x - y + \frac{1}{5} = 0$ $\searrow \times 15$

$\frac{15}{3}(2x) - 15y + \frac{15}{5}(1) = 15(0)$

$5(2x) - 15y + 3 = 0$

$10x - 15y + 3 = 0$

4. Rearrange the following into slope y-intercept form.

a) $4x - 3y = 18$

b) $\frac{1}{2}x + y - 4 = 0$

$4x - 3y - 4x = 18 - 4x$
 $\div (-3) \quad -3y = -4x + 18$
 $y = \frac{4}{3}x - 6$

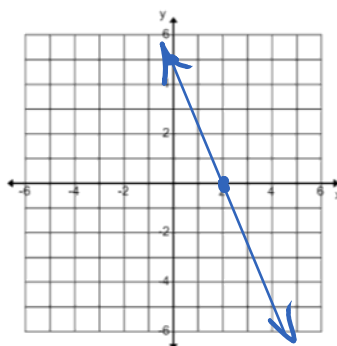
$y = -\frac{1}{2}x + 4$

5. Calculate the x and y intercepts, then graph the following line.

$5x + 2y = 10$

x-int
 $5x = 10$
 $x = 2$

y-int
 $2y = 10$
 $y = 5$



6. Determine the equation of a line that is :

a) parallel to $y = -3x + 5$

$m = -3$
 $m_{\parallel} = -3$

* any line with slope -3, b not 5

$y = -3x + 77$

b) perpendicular to $5x + 2y + 14 = 0$

need to know m

$2y = -5x - 14$
 $y = -\frac{5}{2}x - 7$

$m = -\frac{5}{2}$
 $m_{\perp} = \frac{2}{5}$

any line with $m = \frac{2}{5}$

$y = \frac{2}{5}x$

7. Find the equation of a line that goes through the point $(4, 3)$ AND the point of intersection of $y = 2x - 3$ and $8x + 2y + 18 = 0$.

① $b = -3$
 $m = \frac{2}{1}$

② $8x + 2y = -18$
 x -int y -int
 $8x = -18$ $2y = -18$
 $x = -\frac{18}{8}$ $y = -9$
 $x = -\frac{9}{4}$
 (-2.25)

Find point of intersection

Find equation of line through $(-1, -5), (4, 3)$

$$m = \frac{3 + 5}{4 + 1}$$

$$m = \frac{8}{5}$$

$$y = mx + b$$

$$\frac{8}{5}(4) + b = 3$$

$$\frac{32}{5} + b = \frac{15}{5}$$

$$b = \frac{15}{5} - \frac{32}{5}$$

$$b = \frac{17}{5}$$

$$\therefore \boxed{y = \frac{8}{5}x + \frac{17}{5}}$$

For the test, you will need to know how to...

- create linear equations from graphs
- identify slope and y-intercept from a linear equation
- graph linear equations, including horizontal and vertical lines
- identify linear equations in standard form (and other forms) and be able to transfer between the different forms
- calculate the x and y-intercepts, and then use to graph
- determine the equation of a line given:
 - *slope and y-intercept;
 - *slope and point;
 - *two points
- determine the solution to a linear system (point of intersection)
- determine the number of solutions for a linear system

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