Exercises: Slopes

(1) The slope of all lines perpendicular to the line $y = -\frac{x}{9}$ is $m =$ Solution

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(2) Find the y-intercept of the line which passes through the point $(-1, 0)$ and is also perpendicular to the line $y = -\frac{x}{9}$. Solution

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(3) If m is the slope of the line through the points $(10, 15)$ and $(20, 75)$, then m equals? Solution

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept? Solution

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(5) If m is the slope of the line through the points $(-4, -12)$ and $(4, 12)$, then m is? Solution

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(6) The x-intercept of the line perpendicular to the line $y = -\frac{x}{14}$ which passes through the point $(9, 0)$ is? Solution

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(7) If m is the slope of the line through the points $(0, 4)$ and $(4, 16)$, then m equals? Solution

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(8) The y-intercept of the line perpendicular to the line $y = -\frac{x}{3}$ which passes through the point $(-2, 0)$ is?

Solution

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Solutions:

(1) The slope of all lines perpendicular to the line $y = -\frac{x}{9}$ is **Solution:**

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Solutions:

(1) The slope of all lines perpendicular to the line $y = -\frac{x}{9}$ is **Solution:** $m = 9$

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(2) Find the y-intercept of the line which passes through the point $(-1, 0)$ and is also perpendicular to the line $y = -\frac{x}{9}$.

Solution: The required line has slope

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(2) Find the y-intercept of the line which passes through the point $(-1, 0)$ and is also perpendicular to the line $y = -\frac{x}{9}$.

Solution: The required line has slope 9, so it must satisfy

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(2) Find the y-intercept of the line which passes through the point $(-1, 0)$ and is also perpendicular to the line $y = -\frac{x}{9}$.

Solution: The required line has slope 9, so it must satisfy $y - 0 = 9(x - (-1)) = 9(x + 1)$. When $x = 0$,

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(2) Find the y-intercept of the line which passes through the point $(-1, 0)$ and is also perpendicular to the line $y = -\frac{x}{9}$.

Solution: The required line has slope 9, so it must satisfy $y - 0 = 9(x - (-1)) = 9(x + 1)$. When $x = 0$, $y = 9$.

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(3) If m is the slope of the line through the points $(10, 15)$ and $(20, 75)$, then m equals?

Solution: $m =$

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(3) If m is the slope of the line through the points $(10, 15)$ and $(20, 75)$, then m equals?

Solution: $m = \frac{75 - 15}{20 - 10} =$

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(3) If m is the slope of the line through the points $(10, 15)$ and $(20, 75)$, then m equals?

Solution: $m = \frac{75 - 15}{20 - 10} = \frac{60}{10} =$

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(3) If m is the slope of the line through the points $(10, 15)$ and $(20, 75)$, then m equals?

Solution: $m = \frac{75 - 15}{20 - 10} = \frac{60}{10} = 6$

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} =$

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} = \frac{25}{13} + \frac{40}{13} =$

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} = \frac{25}{13} + \frac{40}{13} = \frac{65}{13} =$

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} = \frac{25}{13} + \frac{40}{13} = \frac{65}{13} = 5$ so

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} = \frac{25}{13} + \frac{40}{13} = \frac{65}{13} = 5$ so $\frac{5}{8}x + y = 5.$

Thus

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} = \frac{25}{13} + \frac{40}{13} = \frac{65}{13} = 5$ so $\frac{5}{8}x + y = 5.$

Thus

$\frac{x}{8} + \frac{y}{5} = 1$, so the x-intercept is

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} = \frac{25}{13} + \frac{40}{13} = \frac{65}{13} = 5$ so $\frac{5}{8}x + y = 5.$

Thus

$\frac{x}{8} + \frac{y}{5} = 1$, so the x-intercept is 8 and the y-intercept is

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(4) Consider the line perpendicular to the line $y = \frac{8x}{5} + 1$ which passes through the point $\left(\frac{40}{13}, \frac{40}{13}\right)$

What is its x-intercept? What is its y-intercept?

Solution: The line has slope $-\frac{5}{8}$ and must satisfy

$y - \frac{40}{13} = -\frac{5}{8}\left(x - \frac{40}{13}\right)$ or

$\frac{5}{8}x + y = -\frac{5}{8}\left(-\frac{40}{13}\right) + \frac{40}{13} = \frac{25}{13} + \frac{40}{13} = \frac{65}{13} = 5$ so $\frac{5}{8}x + y = 5$.

Thus

$\frac{x}{8} + \frac{y}{5} = 1$, so the x-intercept is 8 and the y-intercept is 5.

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(5) If m is the slope of the line through the points $(-4,-12)$ and $(4,12)$, then m is?

Solution: $m = \frac{12-(-12)}{4-(-4)} =$

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(5) If m is the slope of the line through the points $(-4,-12)$ and $(4,12)$, then m is?

Solution: $m = \frac{12-(-12)}{4-(-4)} = \frac{24}{8} =$

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(5) If m is the slope of the line through the points $(-4,-12)$ and $(4,12)$, then m is?

Solution: $m = \frac{12-(-12)}{4-(-4)} = \frac{24}{8} = 3$

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(6) The x-intercept of the line perpendicular to the line $y = -\frac{x}{14}$ which passes through the point $(9, 0)$ is?

Solution: The perpendicular line has slope

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(6) The x-intercept of the line perpendicular to the line $y = -\frac{x}{14}$ which passes through the point $(9, 0)$ is?

Solution: The perpendicular line has slope 14 and must satisfy

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(6) The x-intercept of the line perpendicular to the line $y = -\frac{x}{14}$ which passes through the point $(9, 0)$ is?

Solution: The perpendicular line has slope 14 and must satisfy $y - 0 = 14(x - 9)$, so its x-intercept is

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(6) The x-intercept of the line perpendicular to the line $y = -\frac{x}{14}$ which passes through the point $(9, 0)$ is?

Solution: The perpendicular line has slope 14 and must satisfy $y - 0 = 14(x - 9)$, so its x-intercept is 9.

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(7) If m is the slope of the line through the points $(0,4)$ and $(4,16)$, then m equals?

Solution: $m = \frac{16-4}{4-0} =$

Back to Questions

(7) If m is the slope of the line through the points $(0,4)$ and $(4,16)$, then m equals?

Solution: $m = \dfrac{16-4}{4-0} = 3$.

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(8) The y-intercept of the line perpendicular to the line $y = -\frac{x}{3}$ which passes through the point $(-2, 0)$ is?

Solution: The perpendicular line has slope

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(8) The y-intercept of the line perpendicular to the line $y = -\frac{x}{3}$ which passes through the point $(-2, 0)$ is?

Solution: The perpendicular line has slope 3 and must satisfy

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(8) The y-intercept of the line perpendicular to the line $y = -\frac{x}{3}$ which passes through the point $(-2, 0)$ is?

Solution: The perpendicular line has slope 3 and must satisfy $y - 0 = 3(x - (-2))$ or

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(8) The y-intercept of the line perpendicular to the line $y = -\frac{x}{3}$ which passes through the point $(-2, 0)$ is?

Solution: The perpendicular line has slope 3 and must satisfy $y - 0 = 3(x - (-2))$ or $y = 3x + 6$, so its y-intercept is

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(8) The y-intercept of the line perpendicular to the line $y = -\frac{x}{3}$ which passes through the point $(-2, 0)$ is?

Solution: The perpendicular line has slope 3 and must satisfy $y - 0 = 3(x - (-2))$ or $y = 3x + 6$, so its y-intercept is 6.