

Bell Ringer 1: Write an equation of the line that is perpendicular to the line $y = -3x + 2$ and passes through the point $(6, 5)$.

Bell Ringer 2: Write an equation of the line that is perpendicular to the line $y = -1$ and passes through the point $(6, 4)$.

Bell Ringer 1: Write an equation of the line that is perpendicular to the line $y = -3x + 2$ and passes through the point $(6, 5)$.

Perpendicular slope is opposite, reciprocal. $m = \frac{1}{3}$

$$y = \frac{1}{3}x + b$$

$$5 = \frac{1}{3}(6) + b$$

$$5 = 2 + b$$

$$3 = b$$

$$\text{Answer: } y = \frac{1}{3}x + 3$$

Bell Ringer 2: Write an equation of the line that is perpendicular to the line $y = -1$ and passes through the point $(6, 4)$.

$y =$ lines and $x =$ lines are perpendicular of one another.

$$\text{Answer } x = 6$$

Predicting with Linear Equations

If a scatter plot can be modeled with an equation (line of best fit), the equation can be used to predict values.

Two Types of Predicting

Linear Interpolation - estimating a value that lies within the starting and ending data points of the scatter plot.

Linear Extrapolation - estimating a value that lies before or after the starting and ending data points of the scatter plot.

The equation of the line of best fit is used in both types of predicting.

Directions for Graphs on Homework

#17 x-axis by 1's and y-axis by 2's or 2000's starting at zero

#18 x-axis by 1's and y-axis by 1's or 1000's starting at zero

#23 x-axis by 1's and y-axis by 0.2's (billion) starting at 16 billion

#25 x-axis by 1's and y-axis by 1's (billion) starting at 30 billion