

The TAKEAWAY

A line of fit can help us summarize a set of data. The line and its equation can help us make predictions about the relationship between the two variables. When you use the trend line or its equation to predict a value within the set of data, you are interpolating. When you make a prediction outside the set of data, you are extrapolating.

8 Algebra CC

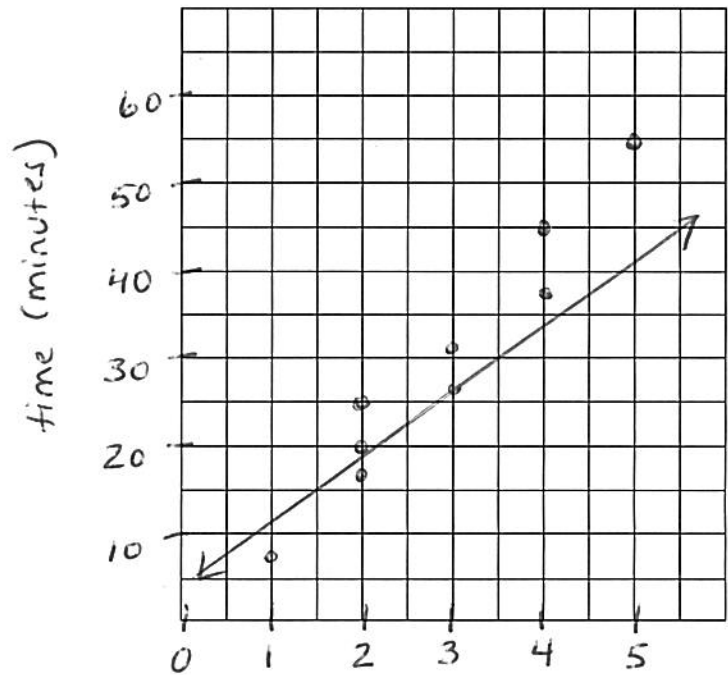
HW # _____



Joyce is training for a 10K race. For some of her training runs, she records the distance she ran and how many minutes it took her.

(a) Make a scatter plot of Joyce's running data.

X Distance (mi)	Y Time (min)
4	38
2	25
1	7
2	16
3	26
5	55
2	20
4	45
3	31



(b) Describe the correlation.

positive

distance in miles

(c) Draw a trend line and write the equation of the line.

$(2, 20)$ $(3, 26)$

slope = +6

y int =

$$\frac{\Delta y}{\Delta x} = \frac{20 - 26}{2 - 3}$$

$$= \frac{-6}{-1}$$

$$= 6$$

$$y = mx + b \quad (2, 20)$$

$$20 = 6(2) + b$$

$$20 = 12 + b$$

$$8 = b$$

$$y = 6x + 8$$