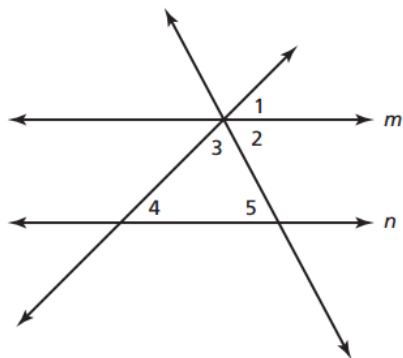


- 11 In the figure below, lines  $m$  and  $n$  are parallel,  $m\angle 2 = 62^\circ$ , and  $m\angle 3 = 73^\circ$ .



Which reasoning proves  $m\angle 4 = 45^\circ$ ?

- A Since  $\angle 2$  and  $\angle 5$  are alternate interior angles,  $m\angle 5$  is also  $62^\circ$ . The sum of the measures of  $\angle 3$ ,  $\angle 4$ , and  $\angle 5$  equals  $180^\circ$ .  $m\angle 2 + m\angle 5 = 124^\circ$ . Therefore,  $m\angle 4 = 56^\circ$ .
- B Since  $\angle 2$  and  $\angle 5$  are corresponding angles,  $m\angle 5$  is also  $62^\circ$ . The sum of the measures of  $\angle 3$ ,  $\angle 4$ , and  $\angle 5$  equals  $180^\circ$ .  $m\angle 3 + m\angle 5 = 135^\circ$ . Therefore,  $m\angle 4 = 45^\circ$ .
- C Since  $\angle 1$  and  $\angle 5$  are alternate interior angles,  $m\angle 5$  is also  $62^\circ$ . The sum of the measures of  $\angle 3$ ,  $\angle 4$ , and  $\angle 5$  equals  $180^\circ$ .  $m\angle 3 + m\angle 5 = 135^\circ$ . Therefore,  $m\angle 4 = 45^\circ$ .
- D Since  $\angle 2$  and  $\angle 5$  are alternate interior angles,  $m\angle 5$  is also  $62^\circ$ . The sum of the measures of  $\angle 3$ ,  $\angle 4$ , and  $\angle 5$  equals  $180^\circ$ .  $m\angle 3 + m\angle 5 = 135^\circ$ . Therefore  $m\angle 4 = 45^\circ$ .

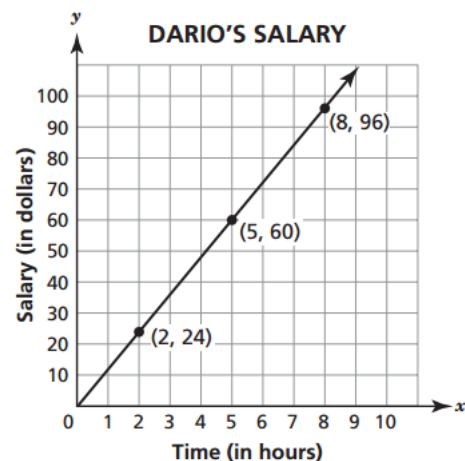
- 10 A plumber charges a base fee for all service appointments. If a repair is needed, he adds a charge for each hour of labor. If the total cost,  $y$ , in dollars, of the plumber's  $x$ -hour repair visit is modeled by the equation  $y = 25x + 30$ , what could the  $y$ -intercept represent?

- A a base fee of \$0 for service appointments
- B a base fee of \$25 for service appointments
- C a base fee of \$30 for service appointments
- D a base fee of \$55 for service appointments

- 15 In April 2011, an online social networking site had approximately 200 million registered accounts. In August, the number of registered accounts had risen to  $3.62 \times 10^8$ . In scientific notation, how many more users were there in August than in April?

- A  $1.62 \times 10^8$
- B  $16.2 \times 10^7$
- C  $162 \times 10^6$
- D 162,000,000

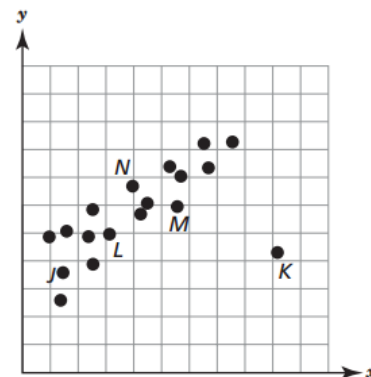
- 21 The graph below shows the number of hours Dario worked and the amount he earned.



What is Dario's hourly salary?

- A \$0.08
- B \$12
- C \$24
- D \$54

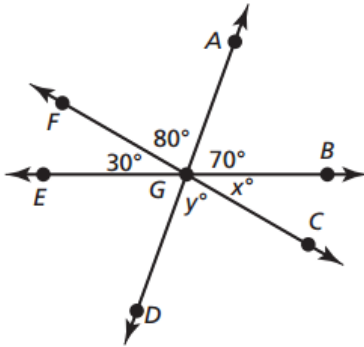
- 39 Look at the scatter plot below. Liza used points  $J$  and  $K$  to draw a line of best fit for the data. Derek used the points  $J$  and  $M$  to draw a line of best fit.



Which reason **best** explains why Derek's line is a better model for the data?

- A Since point  $J$  is close to the other points, the line would also be close.
- B Since the line has a positive slope, it can be used as the line of best fit.
- C Since point  $K$  is a data point, it can be used to find the line of best fit.
- D Since point  $K$  is an outlier, the line would be below the other data points.

- 43  $AD$ ,  $BE$ , and  $CF$  intersect at point  $G$ .



What is the value of  $x$ ?

- A  $30^\circ$
- B  $70^\circ$
- C  $80^\circ$
- D  $110^\circ$

- 41 Of the three linear functions represented below, which has the greatest rate of change?

Function 1:  $y = 2x + 6$

Function 2:

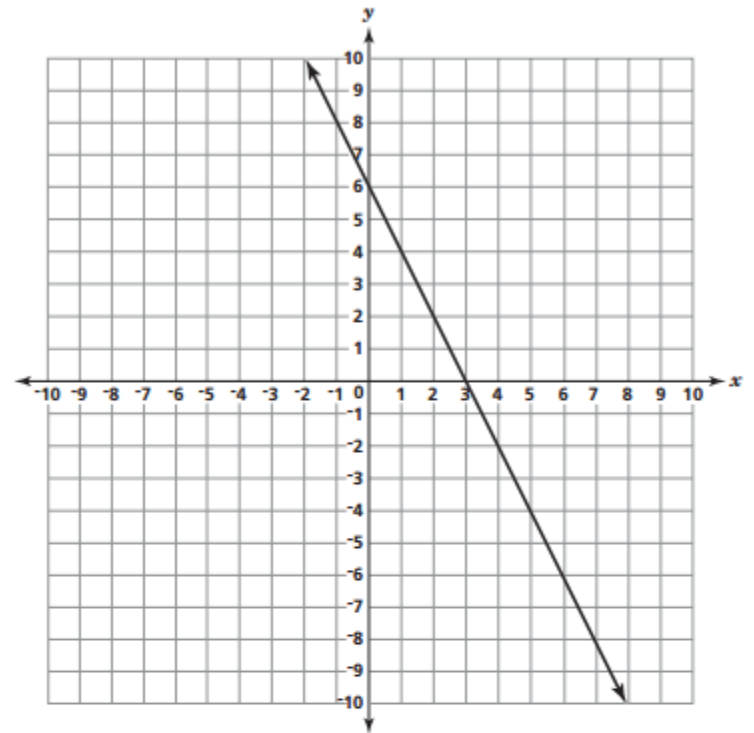
$x$	$y$
-1	3
1	15
2	21

Function 3: a number,  $y$ , is 2 less than half of a number  $x$ .

Which function has the greatest rate of change?

- A Function 3 has the greatest rate of change.
- B Function 2 has the greatest rate of change.
- C Function 1 has the greatest rate of change.
- D All three functions have the same rate of change.

- 78 Consider the graph below.



**Part A**

Find the  $y$ -intercept,  $b$ , and the slope,  $m$ , of the line.

**Show your work.**

**Answer** \_\_\_\_\_

**Part B**

Write the equation of the line.

**Equation** \_\_\_\_\_