

6. How can you tell if a set of bivariate data shows a linear relationship?

Sample answer: Graph the data points. If the points lie along a straight line, the data is linear.

10. the height of a person and the person's age

Not linear; the rate of growth is less as a person gets older.

12. the number of miles to the next service station and the number of kilometers

Linear; the rate of change between units is the conversion factor, which is constant.

18. **Explain the Error** Thomas used (7, 17.5) and (18, 45) from a graph to find the equation of a linear relationship as shown. What was his mistake?

$$m = \frac{45 - 7}{18 - 17.5} = \frac{38}{0.5} = 79$$

$$y = 79x + b$$

$$45 = 79 \cdot 18 + b$$

$$45 = 1422 + b, \text{ so } b = -1377$$

The equation is $y = 79x - 1377$.

He substituted into the slope formula incorrectly.