Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. The slope shown in the graph represents:
   - [Diagram of a line with a negative slope]
   a. zero slope.
   b. negative slope.
   c. undefined slope.
   d. positive slope.

2. A line with a positive slope:
   a. is horizontal.
   b. increases from right to left.
   c. increases from left to right.
   d. is vertical.

3. At the post office, Amaya sorted 45 letters in 17 minutes. After a total of 68 minutes, she has sorted 180 letters. What coordinates would represent her work?
   a. \((45, 17)\) and \((180, 68)\)
   b. \((17, 45)\) and \((68, 180)\)
   c. \((45, 17)\) and \((68, 180)\)
   d. \((68, 45)\) and \((17, 180)\)

Short Answer: Show all your work (Formula, substitute, calculate). Draw a diagram to help you solve the problem. Round to two decimal places

1. What is the slope of a line that includes \((4, 13)\) and \((16, 27)\) as coordinates?

Answer: ____________________
2. Plot coordinate \((-5, 3)\) and label it A. Draw an arrow pointing 7 unit(s) in the positive \(x\) direction, using a dotted line. From this point, draw another arrow 3 unit(s) in the negative \(y\) direction. Label the end as point B.

Draw a solid line between A and B.

Describe the slope of this line as positive, negative, zero, or undefined.

3. Plot coordinate \((-5, -2)\) and label it A. Draw an arrow pointing 7 unit(s) in the positive \(x\) direction, using a dotted line. From this point, draw another arrow 1 unit(s) in the positive \(y\) direction. Label the end as point B.

Draw a solid line between A and B.

Describe the slope of this line as positive, negative, zero, or undefined.
4. Starting from the coordinate \((-1, -3)\), draw a line with a slope of \(\frac{4}{7}\).

5. Starting from the coordinate \((-3, -5)\), draw a line with a slope of \(\frac{3}{5}\).

6. Pascal is climbing a 700-m cliff face, climbing at a constant rate of 50 metres per 30 minutes. After 5 hours, will Pascal have completed his climb?

Answer:_________________________
7. Starting from the coordinate (-3, 4), draw a line with a slope of $\frac{-5}{6}$.

8. A+ Caterers is tracking the popularity of their cheese puff appetizers at a community event. The graph below shows the number of cheese puffs on the tray over the course of the afternoon. Calculate the slope of this line.

Answer: ____________________
9. Joseph and Jolene are fraternal twins. Joseph is 80 cm tall at 4 years of age and 1.1 m tall at 10 years of age. Jolene is 80 cm tall at 5 years of age and 1.25 m tall at 9 years of age. Draw a rate of change graph showing Joseph and Jolene’s heights.

10. Amrit is studying for an exam, reading his textbook at a rate of 0.25 pages/minute. The exam covers a 43-page chapter. How long will it take him to finish reading the chapter?

Answer:____________________
Problem: Show all your work (Formula, substitute, calculate). Draw a diagram to help you solve the problem. Round to two decimal places.

1. Hector borrowed $700.00 from his aunt to pay for repairs to his car. After 2 weeks, he paid her back $150.

   a. Draw a graph showing these first two points and calculate the slope.

   ![Graph](image)

   b. What does the slope represent?

   c. Extend the line all the way to the x-axis. How much money is left to repay after 5 weeks?

   d. How long will it take Hector to repay his loan?
2. A family returning from a camping trip have a 1000-km drive ahead of them. They will travel at an average speed of 70 km/h. The following equation shows their progress:

\[ d = 1000 - 70h \]

In this equation, \( d \) is the distance remaining and \( h \) is the number of hours travelled.

a. What are the independent and dependent variables in this situation?

b. Create a table of values showing the distance remaining at 1-hour intervals, up to 6 hours.

<table>
<thead>
<tr>
<th>Time travelled (h)</th>
<th>Distance remaining (km)</th>
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c. Plot the data and calculate the slope of the line.

![Graph](graph.png)

\[ \text{Slope} = \frac{\text{Change in distance}}{\text{Change in time}} \]

d. What does the slope represent?