



**DAY 7** Rate of Change notes continued

**EXAMPLE 3** Solve Using a Cartesian Plane

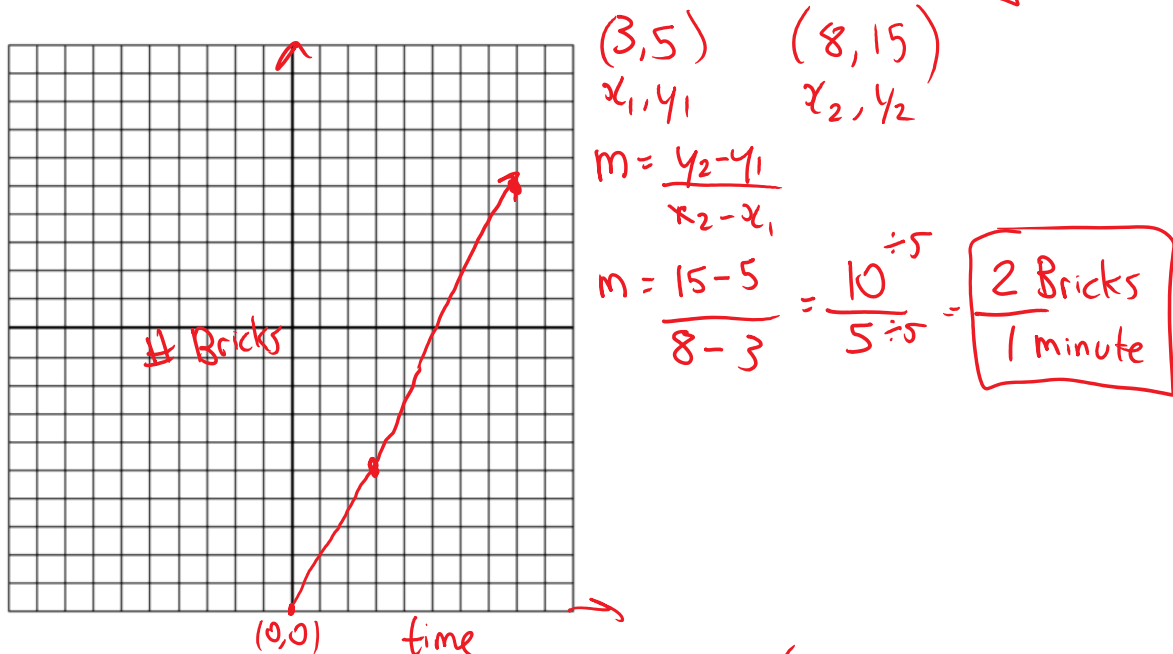
Thomas makes 5 bricks after 3 minutes and 15 bricks after 8 minutes.

- a. What is the dependent and independent variable?

# Bricks (y)                      time (x)

- b. What are the coordinates of Thomas' brick making? Graph and join pts. (x,y)    (3,5)    (8,15)

- c. At what rate is Thomas making bricks? Find the mathematical slope.



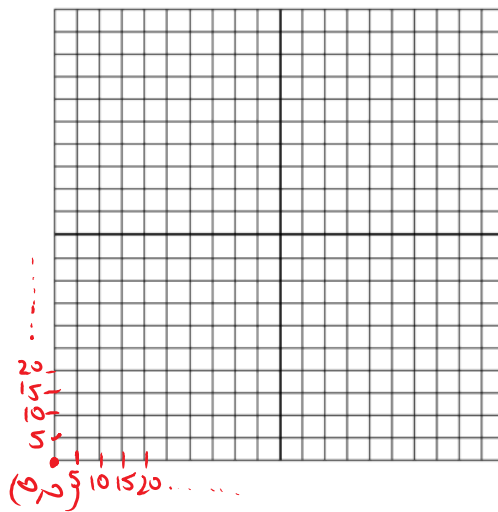
- d. How long would it take Thomas to make 1 brick?  $\frac{2B}{1 \text{ min}} = \frac{1B}{x \text{ min}} \implies 1 \times 1 \div 2 \implies x = 0.5 \text{ min (or 30 sec)}$

- e. How many bricks would Thomas make in 1.5 hours? Hint: how many min?  $1.5 \text{ hr} = 90 \text{ min}$      $\frac{2B}{1 \text{ min}} \implies \frac{200B}{90 \text{ min}} \implies 90 \times 2 \div 1 = 180B$

Assignment Pg 31-34

**DAY 7** *Rate of Change assignment*

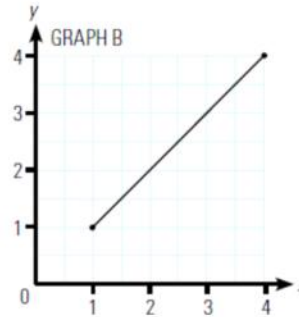
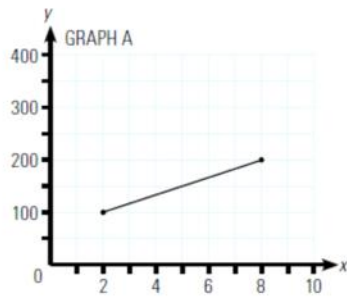
1. Sergio laid 4 shingles after 7 minutes and 29 shingles after 57 minutes.
  - a. Which would be the independent variable and the dependent variable?
  - b. How could you represent Sergio's work as coordinates?
  - c. Graph Sergio's work below. Put (0,0) at the bottom left of the graph. Ask for help with the scale if necessary.



- d. Find the mathematical rate (slope between pts) at which Sergio worked. Use space beside graph.
- e. How long would it take Sergio to lay 1 shingle?
- f. How many shingles would he lay in 5 hours?

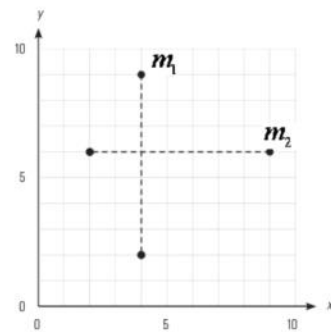
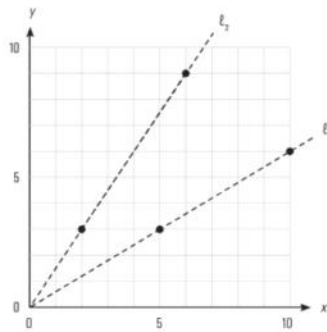
2. Tina is trying to determine which slope is greater, so she asks her friend Suzanne for help. Suzanne says, "Oh, that's easy, my teacher just taught us that a steeper slope is greater, so it's graph B."

a. Is she correct? Look at the graph scales.



b. Find the slope of the lines above.

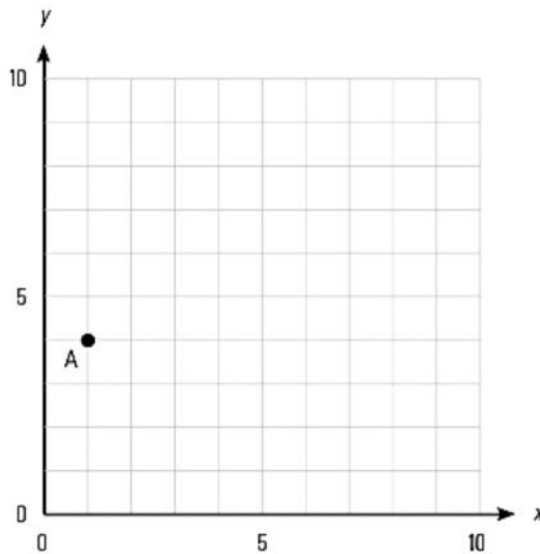
3. Calculate the slope of each of the four lines on the graphs. Arrange them in order from greatest steepness to least? Estimate the coordinates if you can't see the grid lines.



4. Complete the following with the teacher:

Using a ruler and a sharp pencil for precision, draw:

- a solid line that passes through point A and has a slope of  $\frac{6}{5}$
- a dotted line that passes through point A and has a slope of  $-\frac{3}{2}$



5. Morgan is starting to practise for a marathon.

- If she walked 3 km in 30 minutes, what is her average rate in km/h?
- Which is the independent variable?
- If she does not change her pace, how long will it take her to walk a 36-km marathon?

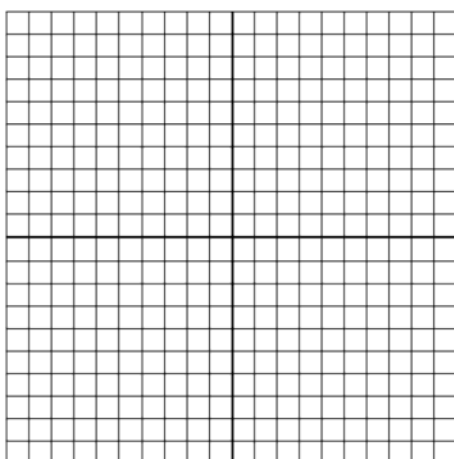
6. Taylor is reading a book at a rate of 0.6 pages/minute.

a. How long will it take him to read the entire 321-page novel?

b. After 2 hours, how many pages will he have read?

7. A line on a graph has the following points. Plot the points and then calculate the slope of each line:

a. (12, 3) and (16, 5)



b. (150, 3) and (25, 6)

