NAME DATE PERIOD

Study Guide: Unit 3

1. Select **all** the points that are on the graph of the line $3x + 5y = 20$.

A. $(0, 4)$

B. $(0, 20)$

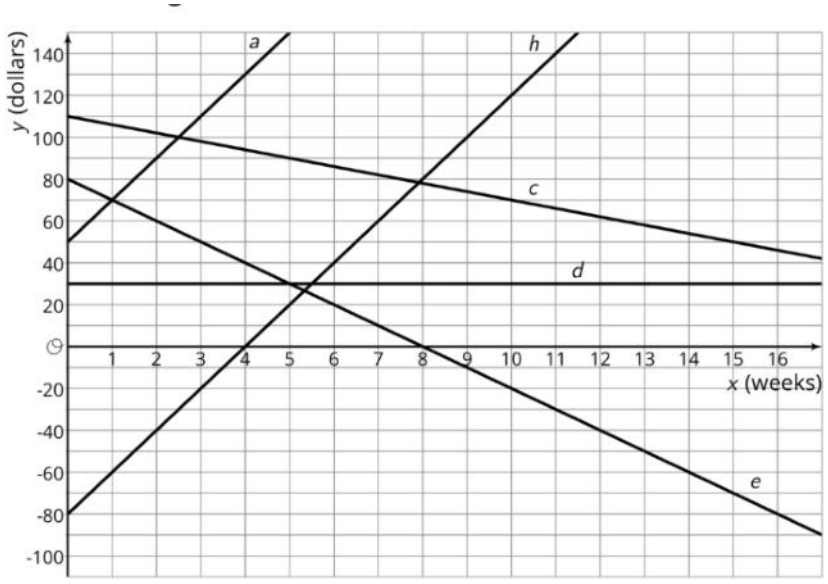
C. $(1, 6)$

D. $(5, 1)$

E. $(15, -5)$

F. $(10, 0)$

2. Each line represents one person's weekly savings account balance from the start of the year. **Solve on a separate piece of paper.**



A. Find the slope and the y-intercept for each line.

B. Write an equation for each of the given lines.

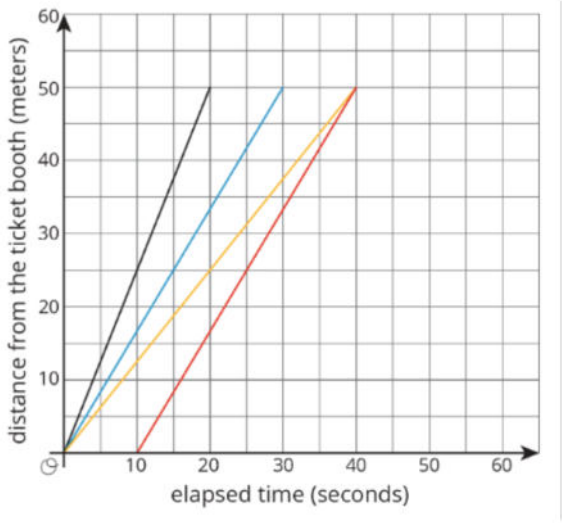
C. Over the course of 20 weeks which account had highest dollar amount?

D. Which account (s) is decreasing steadily?

NAME DATE PERIOD

3. Lin left the booth at the same time as Tyler but reached the bumper cars in 20 seconds; her time of arrival at the bumper cars is shown by the point (20,50). Diego left at the same time as the first three, but it took him 30 seconds to reach the bumper cars. His arrival at the bumper cars is shown by the point (30,50). Tyler's arrival at the bumper cars is shown by the point (40,50). Mai's leaves 10 seconds after Tyler.

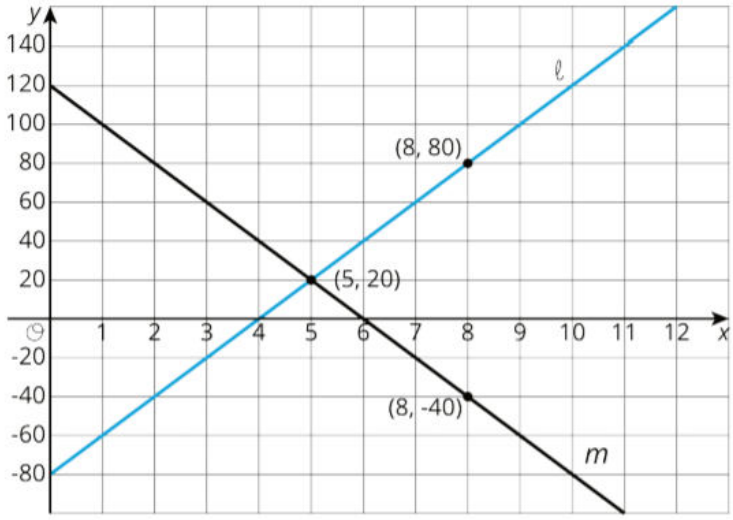
Which line is Lin? Diego? and Tyler? Mai?



NAME DATE PERIOD

NAME DATE PERIOD

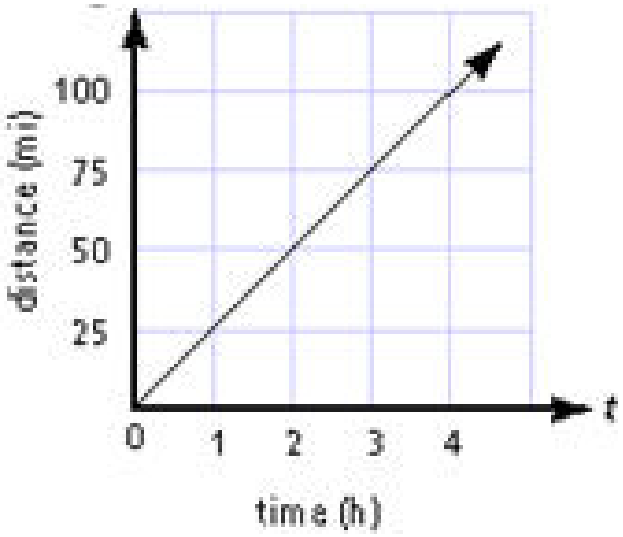
4. Find an equation for each line.



NAME DATE PERIOD

5. Three runners are training for a marathon. One day, they all run about ten miles, each at their own constant speed.

   - This graph shows how long, in minutes, it takes **Runner #1** to run d miles.



   - The equation that relates **Runner #2**'s distance (in miles) with time (in minutes) is $t = 9.5\,d$.

   - **Runner #3**'s information is in the table:

distance (miles)	time (minutes)
2	14
4	24
6	38
8	52
10	66

Which of the three runners has the fastest pace? Explain how you know.

NAME DATE PERIOD

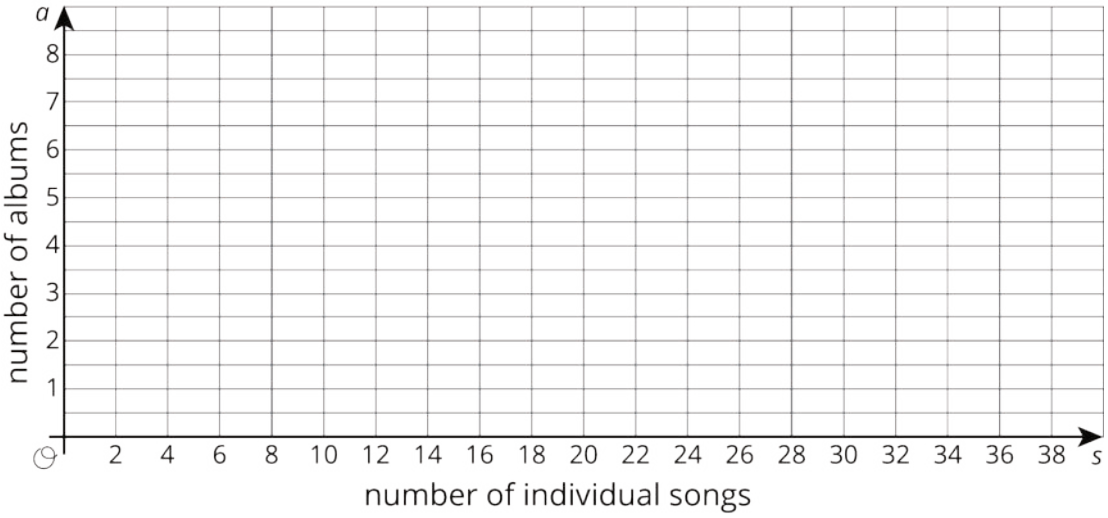
6. It costs $0.65 to download an individual song and $5 to download an album. Jada has $20 to spend downloading music.

   a. Complete the table showing three ways Jada can spend $20 downloading individual songs and albums.

number of individual songs, s	number of albums, a
5	
	1
30	

   b. Write an equation relating the the number of individual songs s and the number of albums a Jada can download.

   c. Sketch a graph of the solutions to your equation.



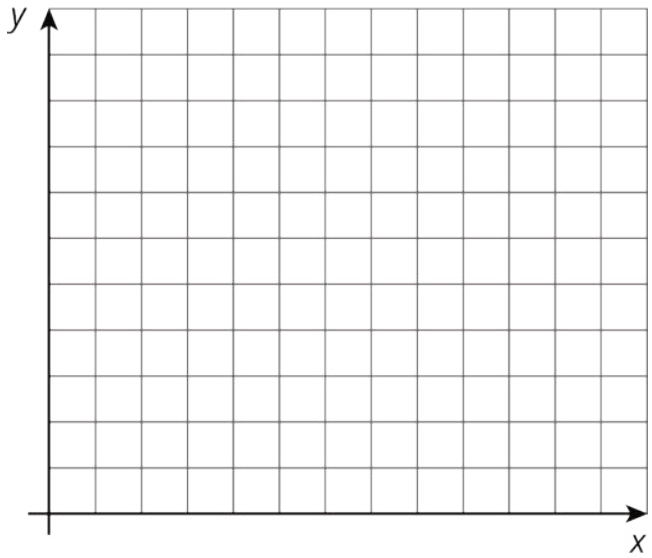
NAME DATE PERIOD

7. A cell phone plan costs $150 to start. Then there is a $ charge each month.

a. What is the total cost (start up fee and monthly charge) to use the cell phone plan for 1 month?

b. What is the total cost for x months?

c. Graph the cost of the cell phone plan over a period of two years, using months as the units of time. Be sure to label your axes and scale them by labeling each gridline with a number.



d. Is there a proportional relationship between time and the cost of the cell phone plan? Explain how you know.

e. Draw a line parallel to the line you graphed that goes through the point $(0, 250)$. Suppose that this line represents the pricing plan for another company. What is the startup fee and monthly cost for this plan?