1.

Jacqueline is saving for an IPhone. She starts off with $25 that her parents gave her. She plans to deposit $30 per month from her babysitting jobs.
a. Write an equation to represent how much moneyJacqueline has saved.
b. What does x represent?
c. What does y represent?
d. Draw a graph to represent how much money Jacqueline has saved.
e. When will she have enought to buy an Iphone that cost $695?

2.

A restaurant wants to buy paper plates in bulk so they want to join a wholesale store (like Sam's Club). There are three stores they could join.

A: charges a membership fee of $100 and then $25 per bulk package of paper plates
B: charges a membership fee of $50 and then $30 per bulk package of paper plates
C: charges a membership fee of $200 and then $20 per bulk package of paper plates

1. Write an equation for each store.
2. Which store has the cheapest rate for packages of paper plates?
3. Which store has the highest membership fee?
4. Which store would give the overall cheapest price if the restaurant needed to buy 2 packs, 5 pack and 10 packs of paper plates.

3. You are flying a helicopter on a really hot day. At 6,000 feet, your engines fail. The helicopter's instruments say that you are losing 400 vertical feet for every horizontal mile. Given this information, x represents each horizontal mile and y represents the total distance traveled.

    a. What does x represent?

    b. What does y represent?

    _____

    _____

    c. What is the slope?

    d. What is the y-intercept?

    _____

    _____

    e. Circle the data table that represents this scenario.

X	Y
400	6,000
800	12,000
1,200	18,000

X	Y
1	5,600
2	5,200
3	4,600

X	Y
0	6,000
10	2,000
20	-2,000

4.

Three trains (A, B, and C) leave a train station at the same time. The graph shows the relationship between time and distance for Train A.
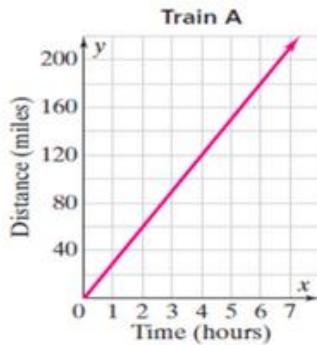
Train A

Train B: y = 45x

Train C

| Time (hours)	Distance (miles)
3	105
6	210
9	315
12	420

1. What is the slope of the graph?

2. What does the slope represent?

3. Compare the speed of Train C to the speeds of Train A and Train B.

5.

The equation y = 11x represents the calories Jake burns when cross-country skiing, where *x* is time in minutes and *y* is the number of calories. The graph shows the calories he burns while playing basketball. Which activity burns calories at a faster rate? *Explain.*

Basketball
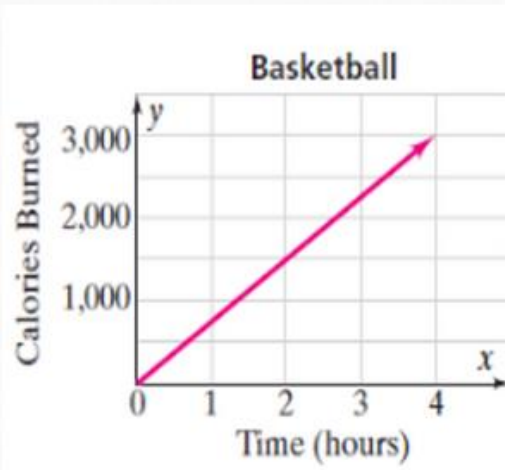
6.

A bowling alley offers different birthday party packages:
- Package A is represented by the function c = 7p + 5 where c is the total cost and p is the number of people.
- Package B is represented in the table.

Package B	
Number of People	Total Cost $
1	12.50
2	19.00
3	25.50
4	32.00

1. Compare the functions.

2. If 12 people attend the birthday party, which package will cost less and by how much?

7.

If Bobby went with Gold's Gym, the membership fee would have been $30 but only $2 per exercise class.

      c. Fill in the table provided with this new information (as done above).
      d. Plot the ordered pairs on the graph above.
      e. Which of the two gyms would cost more in the long run?

c	T
2	
4	
8	
10	

_____

_____

_____

_____

_____

8.

THE PLANT PROBLEM

Name _____

Intro to Multistep Equations in Context

Professor Botano is gathering data on the growth rate of a certain new hybrid seed. He spilled coffee on his clipboard and destroyed most of the data, but he DID remember that the seed had been growing at a constant rate throughout his observations. Help him reconstruct the data.

❶ Figure out the missing values for Professor Botano's table below:

# of days since seed was planted	0	2	3	4	6	8
Height of seedling (in inches)				7	12	

❷ What is the plant's daily growth rate? _____

❸ What is a possible explanation for the number in the height spot on day 0?

❹ Write a function for the height of the seedling in terms of days (use h for height and d for days): _____

❺ Determine and explain the **domain** and **range** of your function.

❻ Think, show, and interpret!

How tall was the plant on **day 1**?

When will the plant be **20 inches** tall?

❼ Use this grid to create your <u>best possible</u> line graph that shows the height of the plant in terms of days.

Professor Botano's Hybrid Seed Study: an Analysis of Height over Time

d	h
0	
2	
3	
4	7
6	12
8	