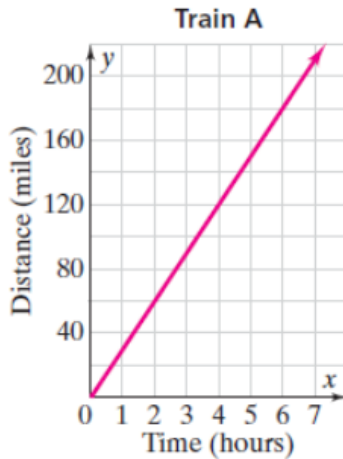## Problem 1:

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

a.   What is the slope of the graph?   b.   What does this slope represent?

c.   The relationship between time and distance for Train B is given by the equation above, where x represents hours and y represents miles. Find the slope m and y-intercept.

d.   Which train is moving faster, Train A or Train B? How do you know?

e.   The time-distance relationship for Train C is shown in the table above. What is the ratio of distance to time? Is it constant?

f.   Compare the speed of Train C to the speeds of Train A and Train B. Which train is faster?

Problem 2:
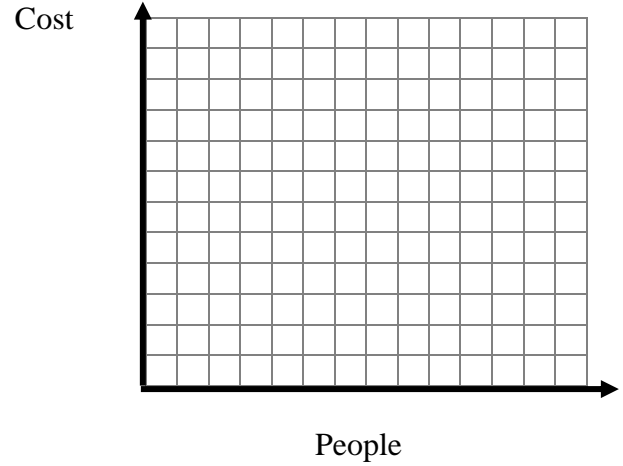
Skyhigh offers a couple of different packages.

Cost

Option 1: A fixed price of $400 for unlimited people.

Option 2: A flat rate of $100 for the first 5 people and then $30 for each person after 5.

Option 3: Thirty-five dollars per person.

a) Make a table to represent Option 2.

People	Cost
0	
2	
5	
10	

People

b) Draw a graph to represent each of the above situations.

c) If you have a total of 10 people, which option is the better deal?

d) What does it mean when the lines cross?

e) Write an equation to represent each of the options.