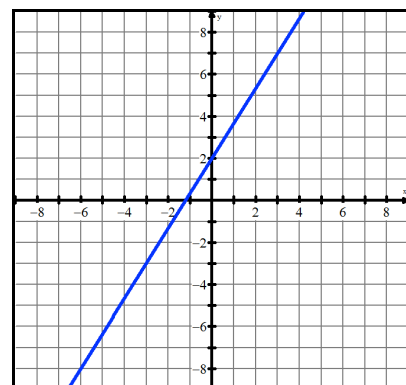# IM2 QUIZ #1 – Review of Linear Relations | Name:

1. Determine the slope of the line connecting the points (-1, 4) and (4,-11). **(2M)**

2. From the graph shown below, determine the slope of the line. **(3M)**

3. An electrician charges $25 per service call plus $45 an hour plus the cost of the parts used. The total bill for a recent job was $255. If the parts for this job cost $85 and *x* represents the number of hours worked, which of the four equations below can be used to model this problem? Explain the reasoning for your choice. **(3M)**

The equations are:	Your REASON for your choice is:
A. 25*x* + 45 + 85 = 255 **B.** 25 + 45*x* + 85 = 255 **C.** 25 + 45 + 85*x* = 255 **D.** 25 + 45 + *x* + 85 = 255 YOUR CHOICE IS _____.	

4. A line has a slope of -4 and goes through the point (3,-1). Determine the equation of this line. Write your final equation in slope-intercept form as well as in slope-point form. **(3M)**
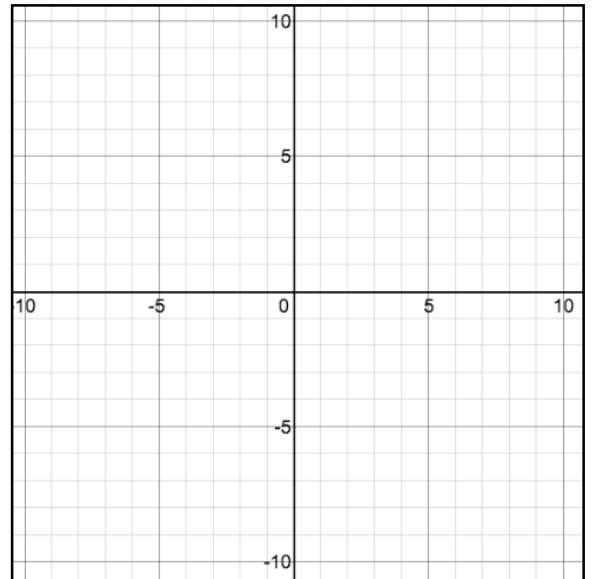
5. In this question, you will work with the linear equation $y = \dfrac{2}{3}x - 4$.

    a. Graph the line $y = \dfrac{2}{3}x - 4$ on the grid provided. **(3M)**

    b. Does this line extend and go through the point (15,9).
        Show your reasoning. **(3M)**

6. You have been provided with a student's sketch showing 3 lines. The graph has no scale and the equations are not given in the diagram.

    a. Which line(s) have a negative slope? Explain how you
        determined your answer. **(2M)**

LINE #2   LINE #1

LINE #3

    b. Which line(s) have a positive y-intercept? Explain how you
        determined your answer. **(2M)**
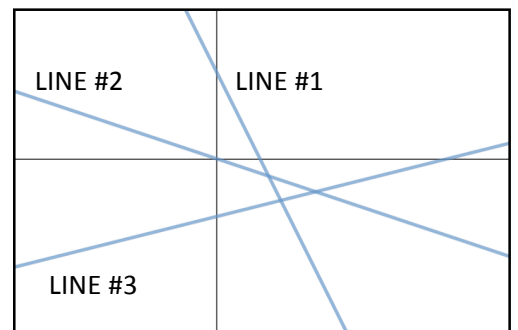
    c. Write a possible equation for LINE #2. Explain how you decided what its slope and y-intercept could be.
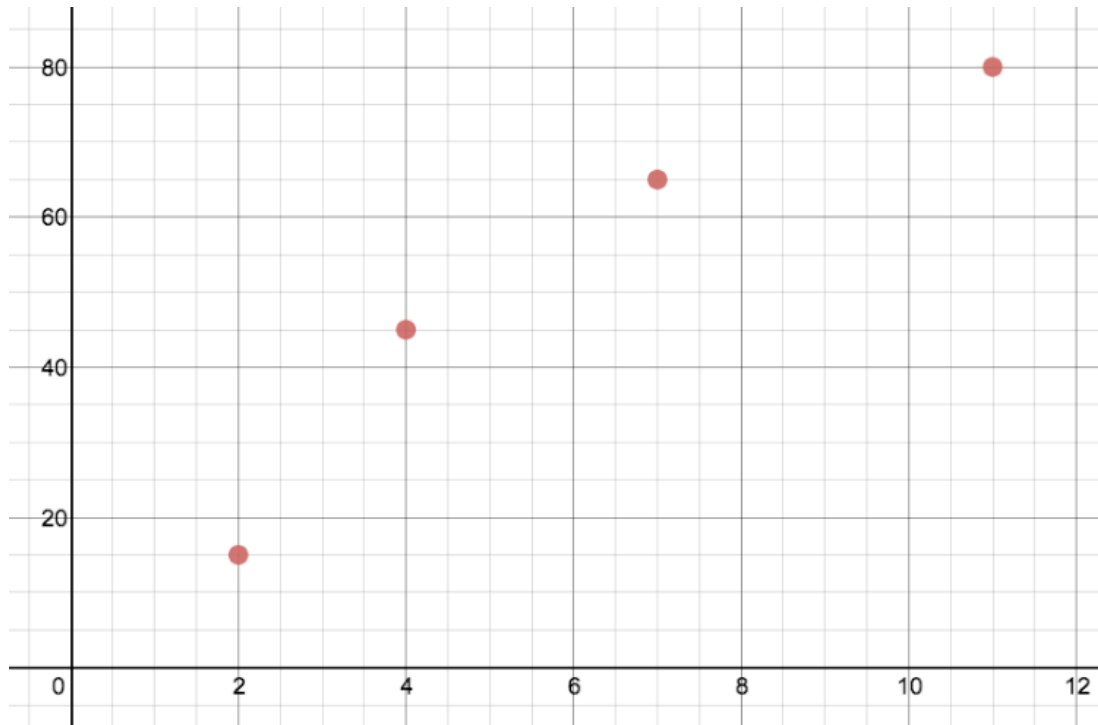   **(2M)**

7. Mr. Santowski repeated his data collection for our Spaghetti lab and collected the following data and has graphed the data points. Here is his data set:

Pieces of Spaghetti	2	4	7	11
Weights supported	15	45	65	80

a. Draw the line of best fit on the graph of the data points provided below. **(1M)**

b. Determine the equation of the line of best fit that you just drew. **(3M)**

c. Mr. S. wants to make a bridge that supports 1,050 weights. Explain/show how he could do this. **(2M)**

8. Ms. Peralta is renting a car. She pays $75 a day plus $1.25 for every kilometer she travels in the car. The table of values included shows some of the data of the distance she travelled in the car and her total cost for renting the car.

Kilometers travelled	Total Rental cost
20	100.00
50	137.50
100	200.00

a. Write a linear equation that represents the relationship between distance travelled and the cost. **(2M)**

b. Graph the linear relation on the grid included. **(2M)**
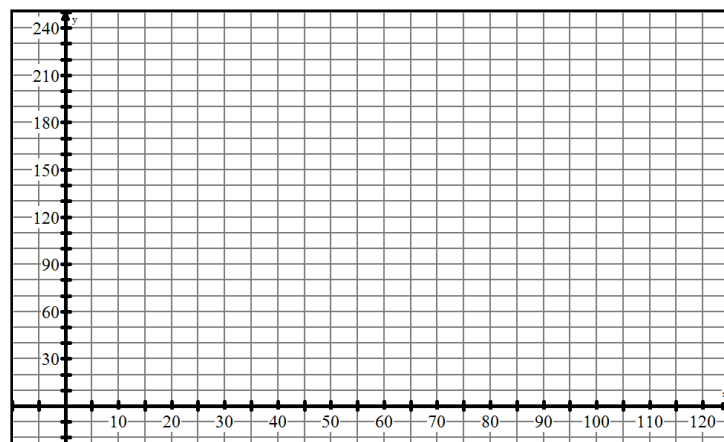
c. If Ms. Peralta has to pay $300 for her car rental, how far did she travel? Show the work or reasoning that leads to your solution. **(3M)**

d. Ms. Peralta sometimes travels during the winter and on those occasions, she has to pay $50 a day plus $1.00 per kilometer. Explain how the graph of the linear relation has changed. **(2M)**