Name: _____
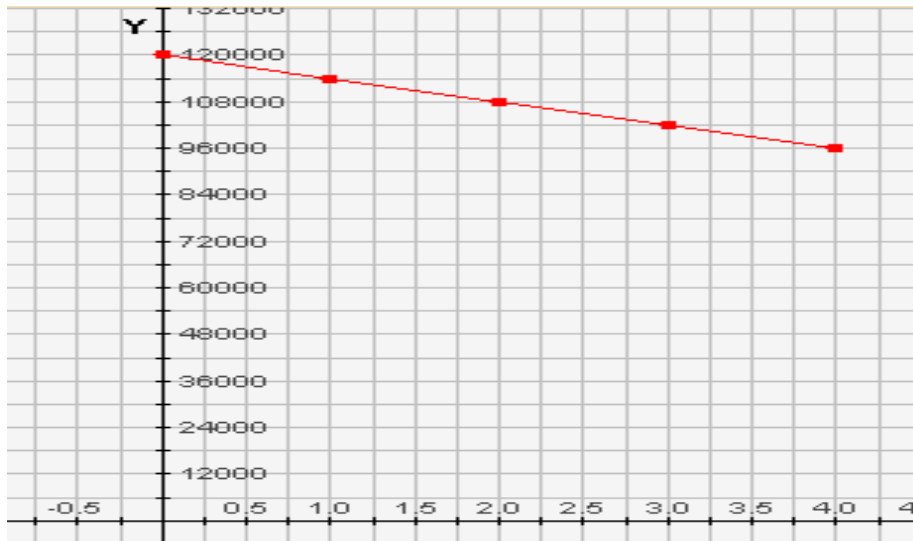
MATH133
Unit 1 Individual Project 2 B

1)  The following graph shows how a 4-color web printing press depreciates from the
    year 2006 to the year 2010.  It was purchased new in the year 2006; therefore *x*
    = 0 represents the year 2006.

    X – axis (horizontal) = years starting from 0 = 2006 and increasing by 0.5 years
    Y – axis (vertical) = price in $ amounts from 12,000 to 120,000



a)  List the coordinates of any two points on the graph in (*x, y*) form.  The numbers
    on the horizontal axis are 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, and 4.0.

    (____, ____),(____, ____)

b)  Find the slope of this line:

    Answer:

    Show your work here:

c)  Find the linear equation of this line in slope-intercept form.

    Answer:

    Show or explain your work here:

d)    If trend for the depreciation of the press continued, what would be its value in the year 2015?  Show how you obtained your answer using the linear equation you found in part c).

Answer:

Show or explain your work here:

e)    If the trend continued, in how many years would the value of the printing press be $24,000?    Show how you obtained your answer using the linear equation you found in part c).

Answer:

Explain your work here:

2)    Suppose that the length of a rectangle is three cm longer than twice the width and that the perimeter of the rectangle is 90 cm.

a)    Set up an equation for the perimeter involving only $W$, the width of the rectangle.

Answer:

b)    Solve this linear equation algebraically to find the width of the rectangle.  Find the length as well.

Answer:  Length _____, Width _____

Show your work here:

c)    Using the **same length** as your answer in part b), find a **new perimeter** if the **new width** is 5 less than one-half of the length.

Answer:

Explain your work here in one or two sentences:

3)      A temporary agency offers two payment options for administrative help:

Option1:  $25 daily fee plus $10/hour; or

Option 2:  No daily fee but $15/hour.

Let $x$ = total hours worked.

a)      Write a mathematical model representing the total temp cost, $C$, for a **four**-day temporary administrative assistant in terms of $x$ for the following:

Option 1: $C=$_____

Option 2: $C=$_____

b)      How many total hours would the temp need to work in the four-day period for the cost of Option 1 to be less than Option 2.  Set up an inequality and show your work algebraically using the information in part a).  Don't forget about the daily fee in Option 1 (it's a four-day proposition!).

Answer:

Show your work here:

c)      Summarize your findings in a brief sentence.

Answer:

4)    Graph the equations by completing the tables and plotting the points on separate graphs.  You may use Excel or another web-based graphing utility.

a)  Complete the table using the given values of x and the equation y = 2x – 5. Show your work.

| x | y |
|---|---|
| -1 |  |
| 1 |  |
| 3 |  |

b) Graph the equation here by plotting the points from your table.  For help on creating your graph in Excel and inserting graphs into a Word Doc please see the tutorial in the Assignment List.

c) Complete the table using the given values of x and the equation -3x + y = 7.
   Show your work.

| x | y |
|---|---|
| -3 | |
| -2 | |
| -1 | |
| 0 | |
| 1 | |

d) Graph the equation here by plotting the points from your table.  For help on
   creating your graph in Excel and inserting graphs into a Word Doc please see the
   tutorial in the Assignment List.