Name: _____ Period: _____ Due Date: <u>January 22, 2018</u>

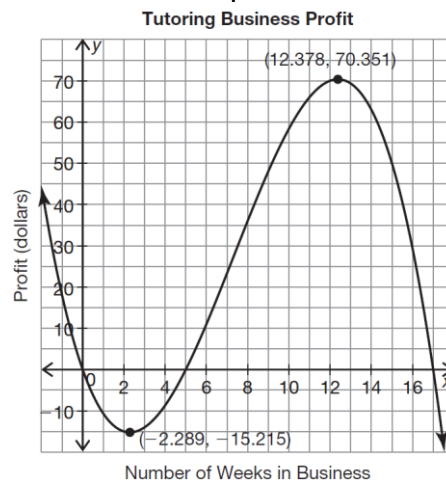(MATH 5)

Polynomial Equations & Division Homework #2

Directions: Solve each of the following polynomial equations.

1. $3t^2-7t+2=0$ 2. $2m^2+8m+6=0$

Directions: Use the following graph to answer the questions and write a complete sentence for each.

Tutoring Business Profit

1. How much money did the tutoring business have when they opened their doors?

   When the tutoring business opened their

   doors, they had _____.

2. How many weeks did it take for the tutoring business to start making a profit?

3. After how many weeks did it take the tutoring business to make $30 profit?

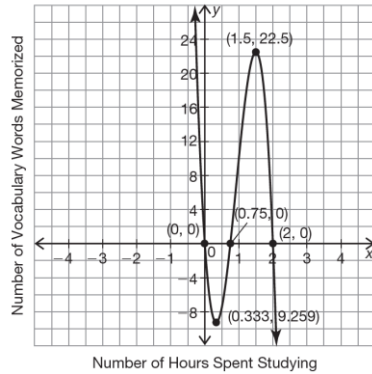4. What was the most profit that the tutoring business made in one week? What week was this?

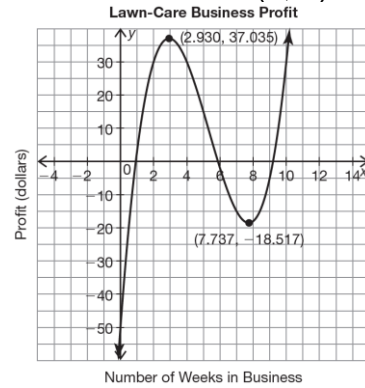5. When do you think the tutoring business should close their doors? Why?

6. Do you think this graph is realistic for real life? Why or why not?

Directions: Determine the average rate of change for the given interval for each polynomial function.

1. Over the interval (0, 1.5)

Number of Vocabulary Words Memorized (y-axis)
Number of Hours Spent Studying (x-axis)

Points labeled: (1.5, 22.5), (0.75, 0), (0, 0), (2, 0), (0.333, 9.259)

2. Over the interval (5, 7)

Lawn-Care Business Profit

Profit (dollars) (y-axis)
Number of Weeks in Business (x-axis)

Points labeled: (2.930, 37.035), (7.737, −18.517)

Directions: Determine whether the given factor is a factor of each polynomial. Explain your answer.

1. Is x-1 a factor of
   $x^4 - 3x^3 + 6x^2 - 12x + 8$?

2. Is 3x+2 a factor of
   $3x^5 + 20x^4 + 9x^3 - 92x^2 - 60x$?