

Name: _____

MATH133

Unit 2 Individual Project 2 B

Typing hint: Type x^2 as x^2 (shift 6 on the keyboard will give ^)

1) Solve the following quadratic equation by factoring:

a) $x^2 + 7x + 10 = 0$

Answers:

Show your work here:

b) Solve the quadratic equation $2x^2 - 3x - 2 = 0$ using the quadratic formula. Read the information in the assignment list to learn more about how to type math symbols in MS Word, such as the square root.

Answers:

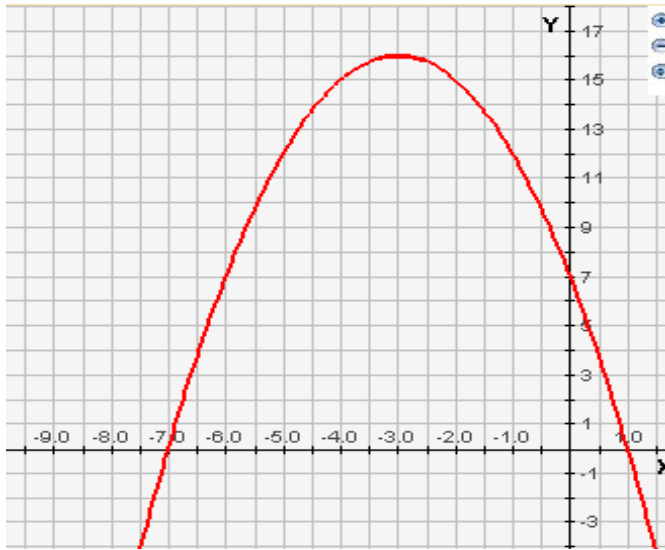
Show your work here:

c) Compute the discriminant of the quadratic equation $3x^2 + x + 2 = 0$. Then write a brief sentence describing the number and type of solutions for this equation.

Answers:

Show your work here:

2) Use the graph of $y = 7 - 6x - x^2$ to answer the following:



a) Without solving the equation (or factoring), determine the solutions to the equation $7 - 6x - x^2 = 0$ using only the graph.

Answer:

Explain how you obtain your answer(s) by looking at the graph in a brief sentence:

b) Does this function have a maximum or a minimum?

Answer:

Explain how you obtain your answer by looking at the graph in a brief sentence:

c) What are the coordinates of the vertex in (x, y) form?

Answer:

d) What is the equation of the axis of symmetry for this parabola?

Answer:

- 3) The profit function for the Recklus Hang gliding Service is $P(x) = -0.2x^2 + fx - m$, where f represents the set up fee for a customer's daily excursion and m represents the monthly hanger rental. Also, P represents the monthly profit in dollars of the small business where x is the number of flight excursions facilitated in that month.

- a) If \$30 is charged for a set up fee, and the monthly hanger rental is \$600; write an equation for the profit, P, in terms of x.

Typing hint: Type x-squared as x^2

Answer:

- b) How much is the profit when 40 flight excursions are sold in a month?

Answer:

Show your work here:

- c) How many flight excursions must be sold in order to maximize the profit? Show your work algebraically. Trial and error is not an appropriate method of solution – use methods taught in class.

Answer:

Show your work here:

- d) What is the maximum profit?

Answer:

Show your work here:

- 4) Graph the equation by completing the table and plotting the points. You may use Excel or another web-based graphing utility.

a) $y = 3x - x^2$

Use the values of x provided in the table to find the y values. Show your work.

x	y
-2	
-1	
0	
1	
2	
3	
4	
5	

b) Place your graph here: [For help on creating your graph in Excel and inserting graphs into a Word Doc please see the tutorial in the Assignment List.](#)

c) Determine the two x-intercepts of this parabola in (x,y) form and explain how you found these ordered pairs in a sentence.

Answers: