

Name \_\_\_\_\_

Period \_\_\_\_\_ Date \_\_\_\_\_

## Homework 5.2.4

1) Solve the following quadratic equations. Use any method that you like. Show your work.

a)  $x^2 - 13x + 42 = 0$

b)  $0 = 3x^2 + 10x - 8$

c)  $2x^2 - 10x = 0$

d)  $4x^2 + 8x - 60 = 0$

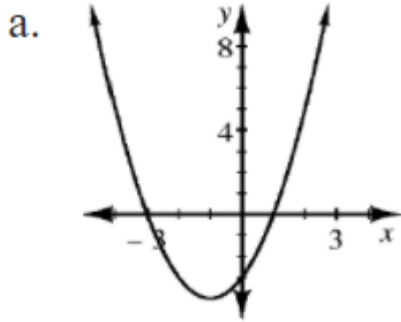
2) While solving  $(x - 5)(x + 2) = -6$ , Kyle decides that  $x$  must equal 5 or  $-2$ . "Not so fast!" exclaims Stanton. "The product does not equal zero. We need to change the equation first."

a) What is Stanton talking about?

b) Rewrite the equation so that you can solve it.

Hint: first multiply  $(x - 5)(x + 2)$  so that you can write an equation that = 0

3) Write an equation for each representation of a quadratic function given below. What are the maximum values of each?



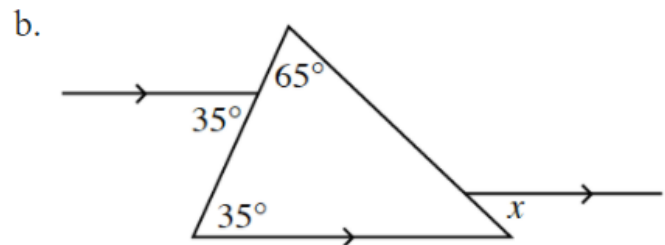
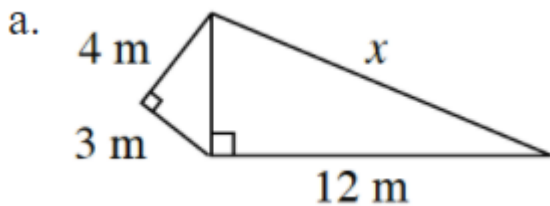
Equation: \_\_\_\_\_  
Maximum: \_\_\_\_\_

b.

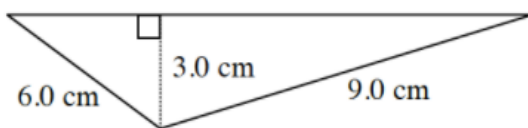
|     |    |    |    |    |    |    |   |   |    |
|-----|----|----|----|----|----|----|---|---|----|
| $x$ | -4 | -3 | -2 | -1 | 0  | 1  | 2 | 3 | 4  |
| $y$ | 12 | 5  | 0  | -3 | -4 | -3 | 0 | 5 | 12 |

Equation: \_\_\_\_\_  
Maximum: \_\_\_\_\_

4) For each diagram below, solve for  $x$ . Name the relationship(s) you used. Show all work.



5) Refer to the triangle below



a) Calculate the length of the unlabeled side of the large triangle. Write your answer in exact form.

b) Calculate the area of the large triangle. Write your answer both exactly and approximately.

c) Calculate the perimeter of the large triangle. Write your answer both exactly and approximately.