HAT 9/28/17 Name:_____

Chapter 4 Practice

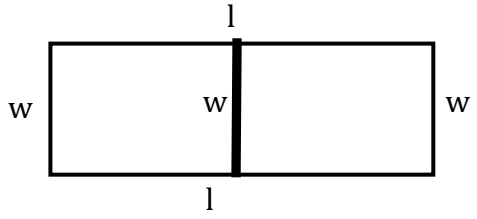
1. Given $3x^2 + 2x - 4 = 0$.

   a. Determine the **discriminant** and interpret the number AND type of solutions.

   b. Solve $3x^2 + 2x - 4 = 0$. using the quadratic formula.

   c. Solve $3x^2 + 2x - 4 = 0$. by completing the square.

2. A rancher has 200 feet of fencing to enclose two adjacent rectangular corrals. What dimensions would maximize the area?



3. Simplify.

a. $i^{67}$

b. $\dfrac{5-2i}{1-i}$

4. The number $13+i$ can be factored into the product of $1+2i$ and what other complex number?

5. Sketch the corresponding graph and state the number and type of roots for each description

   a. $b^2-4ac=0$

   b. A quadratic function in which $f(x)$ never equals zero

   c. The discriminant is less than zero

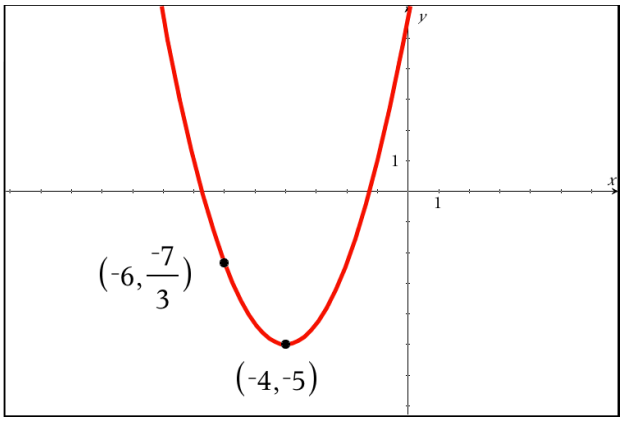
6. Write a quadratic inequality for each condition:

   a. the solution set is all real numbers

   b. the solution set is the empty set (no solutions)

7. Given the parabola.

a. Write the equation of the parabola in VERTEX FORM.




b. Use your answer from part (a) to write the equation of the parabola in STANDARD FORM.

8. Write the equation of a parabola in FACTORED FORM that has x-intercepts at $(-6,0)$ and $(2,0)$ and y-intercept at $(0,-20)$

9. Write an inequality to represent this solution.