

Name: _____

Date: _____

Lesson 9 Assessment

1. Factor each of the following quadratic expressions. Write your answers in factored form.

a) $x^2 - 6x + 8$

b) $x^2 + x - 2$

c) $15x^2 - 3x$

d) $x^2 - 9$

2. Simplify each of the following and write in the form $a + bi$.

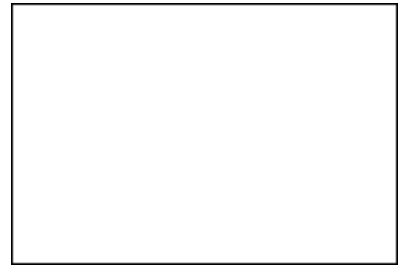
a) $\sqrt{-9} =$

b) $\frac{8 - \sqrt{-49}}{8} =$

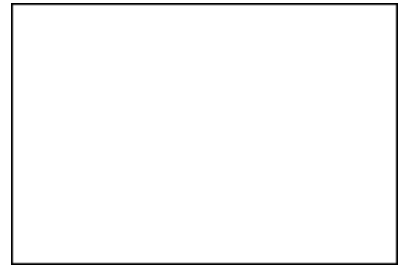
3. By definition, $i = \sqrt{-1}$ and $i^2 =$ _____

4. Solve the following equations *algebraically* (Factoring or Quadratic Formula). You must show all algebraic steps for full credit. Where applicable, give both the exact answers and the decimal approximations rounded to three decimal places. Write complex solutions in the form $x = a + bi$ and $x = a - bi$. Use your calculator to *check* your answers. Sketch the graph on a good viewing window (the vertex, vertical intercept, and any horizontal intercepts should appear on the screen). **Mark and label** any real solutions on the graph.

a) $3x^2 + 2x + 3 = 8$



b) $x^2 + 9x + 11 = x - 5$



c) $x^2 + 3x + 7 = 2$

