**DO YOUR HOMEWORK ON A SEPARATE SHEET OF PAPER!!! GRAPH PAPER WHEN NEEDED!**

**Practice 4-7: Complete your assignment on a separate sheet of paper. Show all work.**

 **1**. Solve using the Quadratic Formula

 **a.** $x^{2}-5x-7=0$ **b.** $2x^{2}-5x-3=0$

1. Without solving, find the discriminant and determine the number of real solutions.
2. $-2x^{2}-3x+7=0$ **b**. $x^{2}-6x+9=0$
3. The bakery sells more cupcakes when the prices are lower, but then its profit changes. The function $y=-1000x^{2}+1100x-2.5$ models the bakery’s daily profit, *y* in dollars, from selling cupcakes, where *x* is the price of the cupcakes in dollars. What’s the highest price the bakery can charge and make a profit of at least $200?

**Practice 4-8: Complete your assignment on a separate sheet of paper. Show all work.**

**1.** Simplify

**a**.$ \sqrt{-75}$ **b**. $ \sqrt{-216}$ **c**. ($4-2i)-(3+i)$

**d**. $ (2+i)(4-5i)$ **e**. $\frac{9+12i}{3i}$ **f.** $(9+4i)^{2}$

**2.** Find the absolute value of $4-3i$.

**3**. Solve

**a.** $x^{2}+16=0$**b**. $2x^{2}-4x=-7$

**4. Error Analysis.** Describe and correct the error made in simplifying $\left(4+7i\right)\left(4-7i\right)$.

$\left(4+7i\right)\left(4-7i\right)=16+28i-28i+49i^{2}$

$=16-49$

$=-33$

**Practice 4-9: Complete your assignment on a separate sheet of paper. Show all work.**

1. Solve the system by substitution. $\left\{\begin{array}{c}y=x+1\\y=-x^{2}-2x+3\end{array}\right.$
2. Solve the system by substitution. $\left\{\begin{array}{c}y=x-2\\y=2x^{2}-5x+2\end{array}\right.$
3. Solve the system by graphing. $\left\{\begin{array}{c}y>2x^{2}+x+3\\y<-x^{2}-4x+1\end{array}\right.$
4. Reasoning. How many points of intersection can the graphs of the following types of functions have? Draw graphs to justify your answers.
5. a linear function and a quadratic function
6. two quadratic functions
7. a linear function and an absolute value function