Student ID		

Last Name: _____

First Name: _____

Show all your work.
If necessary, use extra sheets.

When appropriate,
BOX your final answer.

M$5
Homework
25

1. Write a quadratic equation with integer coefficients with the solution set: $\{1,-2\}$

2. Write a quadratic equation with integer coefficients with the solution set: $\left\{\frac{2}{3},-1\right\}$

3. Write a quadratic equation with integer coefficients with the solution set: $\left\{2\pm\sqrt{3}\right\}$

4. Write a quadratic equation with integer coefficients with the solution set: $\{-1\pm 2i\}$

5. Which expression is equivalent to $\frac{4}{3+\sqrt{2}}$?

(1) $\frac{12+4\sqrt{2}}{7}$ (3) $\frac{12-4\sqrt{2}}{7}$

(2) $\frac{12+4\sqrt{2}}{11}$ (4) $\frac{12-4\sqrt{2}}{11}$

6. Which expression is the multiplicative inverse of $1-\sqrt{3}$?

(1) $1+\sqrt{3}$ (3) $-\frac{1}{2}$

(2) $-1+\sqrt{3}$ (4) $\frac{-1-\sqrt{3}}{2}$

7. Simplify:

$$\frac{\frac{1}{x^2}+\frac{1}{xy^2}}{\frac{1}{y^2}+\frac{1}{x}}$$

8. Solve for x and express the roots in simplest $a+bi$ form: $4x+\frac{3}{x}=6$

9. The relationship between voltage, E, current, I, and resistance, Z, is given by the equation $E=IZ$. If a circuit has a current $I=3+2i$ and a resistance $Z=2-i$, what is the voltage of this circuit?

(1) $8+i$ (3) $4+i$

(2) $8+7i$ (4) $4-i$