Math 081, Intermediate Algebra **name:** _____
Algebra Review **date:** _____

Please complete the following exercises *before* you come to class on Monday, January 23, 2012.

I would like for you to show me your best effort on these problems. Please complete them without the use of your calculator, and without the help of any other person.

I look forward to meeting all of you on Monday.

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1. Without the use of your calculator, state whether the value of the following expressions will be *positive*, *negative*, or *zero*.

(**a**) $-425 + 987 - 36$

(**b**) $(378)(-45)(-982)$

(**c**) $\dfrac{-23 + 58}{-23 - 58}$

(**d**) $[5(42 + 90) - 100] \cdot \sqrt{4^2 - 3^2 - 7}$

2. Without the use of your calculator, perform the indicated operations. Simplify your results.

(**a**) $\dfrac{3}{4} \cdot \dfrac{20}{9}$

(**b**) $\dfrac{3}{4} - \dfrac{20}{9}$

(**c**) $\dfrac{3}{4} + \dfrac{20}{9}$

(**d**) $\dfrac{3}{4} \div \dfrac{20}{9}$

3. Without the use of your calculator, evaluate each expression.

(**a**) $4 + 2 \cdot (6 - 2)$

(**b**) $2 \cdot [25 - 2(10 - 4)]$

(**c**) $\left(\dfrac{2}{3}\right)^2 \cdot \left(\dfrac{1 + 2^3}{2^3 - 2}\right)$

(**d**) $\dfrac{2 \cdot 4 - 5}{4^2 + (-2)^3} + \dfrac{3^2}{2^3}$

4. Without the use of your calculator, evaluate each of the following expressions.

(**a**) $y^2 - 4y + 5$ for $y = 3$

(**b**) $\dfrac{2w}{w^2 + 2w + 1}$ for $w = 3$

(**c**) $-2z^2 + z + 3$ for $z = -4$

(**d**) $\dfrac{|3 - 5x|}{(x-2)^2}$ for $x = 4$

5. Simplify each expression by combining like terms.

(**a**) $15x - 14x$

(**b**) $13z + 2 - 14z - 7$

(**c**) $-2(5x - 4) - (4x + 1)$

(**d**) $\dfrac{2}{5}(5x - 10) + \dfrac{1}{4}(8x + 4)$

(**e**) $-4\left(w^2 - 3w - 2\right) - \left(5 - 2w - 3w^2\right)$

(**f**) $\dfrac{1}{4}\left(\dfrac{2}{3}x - \dfrac{1}{2}\right) + \dfrac{1}{10}\left(\dfrac{5}{2}x - \dfrac{15}{4}\right)$