Math 165/166 Pretest Name:
College Algebra (for Business) Box Number:

NO Calculator is allowed for this exam!

1. Perform indicated operations, if defined. If the result is not an integer, express it in the simplest form a/b, where a and b are integers. State "Not possible" if so.

(a) $\frac{5}{6}-\frac{3}{4}$ (b) $\frac{3}{3+\frac{1}{3}}$ (c) $7^{-1}9^{-1}$

(d) $\left(-\frac{10}{3}\right)\left(-\frac{6}{5}\right)$ (e) $9^{3/2}8^{1/3}$ (f) $(1+\sqrt{2})^2$

2. If $f(x)=-x^3+5x^2+5x-3$, find $f(-2)$.

3. Evaluate the value of $\frac{-b+\sqrt{b^2-4ac}}{2a}$ if $a=1, b=-3, c=-2$.

4. Simplify.

(a) $(x^3-2)-[2x^3-(3x+4)]$ (b) $\frac{x}{3y}-\frac{x}{2y}$

(c) $\frac{16x^3y+8x^2y^3}{4x^2y}$

5. Factor x^2-5x+6 and solve $x^2-5x+6=0$.

6. Solve for x.

(a) $x^2 + x = 1$

(b) $2x - \frac{1}{10} = 0.3$

7. The following equation relates Celsius degrees to Fahrenheit: $F = \frac{9}{5}C + 32$. If $F = 24^\circ$, then C=?

8. Which are correct? If correct, then show the work briefly.
Otherwise, give some counterexamples showing that is wrong and make it correct if possible.

(a) $(x+y)^2 = x^2 + y^2$

(b) $(x-1)(x-3) < 0$ implies $x-1<0$ and $x-3<0$.

(c) $\frac{1}{x+y} = \frac{1}{x} + \frac{1}{y}$

(d) $\frac{3x^3 - x}{x} = 3x^3$

(e) $\sqrt{x^2 + y^2} = x + y$

(f) $\sqrt{16} = \pm 4$