Mathematics 101 Worksheet 1.1-1.4

<u>Problems</u>

1) Is 1.3 a rational number? a real number?

2) Is $\sqrt{13}$ a rational number?

3) Is $2.\overline{63}$ an irrational number?

4) Let $A = \{x|x < 2\}$, $B = \{x|x \geq 0\}$, and $C = \{x| -1 < x \leq 5\}$. Graph each set and write the set in interval notation.
a) B
b) C
c) $B \cap C$
d) $A \cup B$

5) Perform the indicated operations.
a) $\frac{5}{8} \div \frac{-13}{40}$
b) $-91 + \sqrt{4}(\sqrt{25} - 13)^2$
c) $-3^2 + 2(| -10 + 5| \div 5)$

6) Simplify.
a) $7 - 3(y + 4)$
b) $\frac{3}{4}(8x - 4) + \frac{1}{2}(6x + 4)$

7) Solve the equations and identify each as a conditional equation, a contradiction, or an identity.
a) $-(4 + 3m) = 9(3 - m)$
b) $3(x + 3) - 2 = 3x + 2$
c) $\frac{2}{3}m + \frac{1}{3}(m - 1) = \frac{-1}{3}m + \frac{1}{3}(4m - 1)$