Math 118 Calculus Ia **Skills 2**

This is another set of algebra skills which I expect you've seen before, but might need to practice.

Due at the beginning of class Thursday, September 15. Write your solutions on separate paper (no ragged edges, please) with multiple pages stapled. (The solutions I received for the first set were great; keep doing it like that.) Have it ready to turn in at the beginning of class.

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1. Solve to find the value of x which satisfies the equation:
   (Leave fractions in your answers if they occur; don't convert to decimals.)

a. $6x + 5 = 12x - 2$

b. $3(x + 16) - 5(3 - x) = 12$

c. $(5/2)(x + 2) - (1/4)(x + 22) = 0$

2. Solve the quadratic equation for x by factoring:

a. $8x^2 + 2x = 0$

b. $x^2 - 4x - 12 = 0$

c. $8x - x^2 = 12$

d. $3x^2 - 3x - 1 = x^2 + 2x + 2$

3. Solve the quadratic equation for x using the quadratic formula.
   (Leave square roots in your answers; don't convert to decimals. If the equation doesn't have any real solutions, say so.)

a. $x^2 - 3x - 3 = 0$

b. $x^2 + 21 = -9x$

c. $8x = 5 + 2x^2$

d. $(2x - 1)^2 = 3x$

4. Find the slope of the line through the two points.

a. $(4, 4)$ and $(5, -14)$

b. $(5, -5)$ and $(-4, 12)$

c. $(20, 15)$ and $(-13, -27)$

5. Write an equation for the line described in each part.

a. The line through $(1, 6)$ with slope $1/2$.

b. The line through $(-4, 13)$ and the origin.

c. The line through $(-4, -3)$ and $(0, 1)$.