MAT 099 Test 1
Fall, 2010 Name_____

Solve each equation. You don't need to check your work, *but you should*, before you hand in the test.

1. (5 pts) $5(6n+1)+3=10(3n-1)$

2. (10 pts) $4(x+1)+8=2(2x+7)-2$

3. (5 pts) $3(x-8)+x=3(x-6)+2$

4. (5 pts) $\frac{1}{27}+\frac{x}{2}=\frac{5}{6}$

5. (5 pts) $\frac{x+1}{8}-\frac{2-x}{3}=\frac{5}{6}$

For word problems, I expect to see you assign your variable(s) in words (Let x = ...) and for you to give the units (for instance, "in dollars").

6. (5 pts) If Sue can paint the kitchen in 2 hours and Ellen can paint the kitchen in 3 hours, how long will it take them to pain the kitchen if they work together?

7. (5 pts) John bought an book in a New York bookstore for $130.38 (with tax). What's the price of the book before tax, if New York sales tax is 6%?

8. (10 pts) **Recall:** The compound interest formula is $A = P\left(1+\frac{r}{n}\right)^{nt}$, where

   Fill in the blanks:

   A = amount in the account after t years = _____

   P = principal or amount invested = _____

   t = time, in years = _____

   r = annual rate of interest = _____

   n = number of times compounded per year = _____

   If a principal amount of $5,000 is invested in an account paying an annual percentage rate of 5%, find the amount in the account after 4 years, if the account is compounded quarterly.

Solve.

9. (5 pts) $|3x - 7| = -5$

10. (5 pts) $|3x - 7| = 5$

11. (10 pts) $|3x - 5| = |4x + 2|$

Solve. Write the final answer in interval notation. Leave fractions as fractions in lowest terms, even if they are improper fractions.

12. (5 pts) $-2x \geq 37$

13. (5 pts) $\frac{5x-3}{9} - \frac{11x+1}{2} \geq -4$

14. (5 pts) $|3x-5| < 7$

16. (5 pts) $|3x-5| > 7$

15. (5 pts) $|3x-5| > -7$

17. (5 pts) $|3x-5| < -7$