MAT 099 Test 1
Spring, 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) $-4(3n-2)-n=-11(n-1)$

2. (5 pts) $6(4x+4)=8(3x+3)$

3. (10 pts) $3(x+1)+5=3x+2$

4. (5 pts) $\frac{3}{8}+\frac{x}{3}=\frac{5}{12}$

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) A second number is five times the first number. A third number is 100 more than the first number. If the sum of the three numbers is 415, find the numbers.

7. (5 pts) John bought an expensive book in a Pennsylvania bookstore for $249.10 (with tax). What's the price of the book before tax, if Pennsylvania sales tax is 6%?

8. (5 pts) Solve $s = \frac{n}{2}(a + L)$ for L.

9. (5 pts) **Recall:** The compound interest formula is $A = P\left(1 + \frac{r}{n}\right)^{nt}$, where

   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 $6,000 is invested in an account paying an annual percentage rate of 4%, find the amount in the account after 4 years, if the account is compounded monthly.

Solve.

10. (5 pts) $|9y+1| = -6$

11. (5 pts) $|9y+1| = 6$

12. (10 pts) $|9y+1| = |6y+4|$

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

13. (5 pts) $-5x > 15$

14. (5 pts) $\frac{5x+1}{7} - \frac{2x-6}{4} \geq -4$

15. (5 pts) $|9y+1| < 5$

17. (5 pts) $|9y+1| > 5$

16. (5 pts) $|9y+1| < -5$

18. (5 pts) $|9y+1| \geq -5$