# Exam III Review Sheet NAME _____

Please show all your work to receive full credit.

1. A suit is on sale for $33\%$ Off. The sale price is $335. What is the regular price?

2. Solve the following equations for the given variable and find all the real solutions. If there are extraneous solutions, so state.

a. $-\frac{3}{2} = -\frac{2}{7}u - \frac{9}{4}$

Solutions: _____

b. $-2(8x - 5) + 2x = 4(x + 5)$

Solution: _____

c. $\sqrt{w - 6} = 6$

Solution: _____

d. $5(y-3)-6=-5(-4y+5)-5y$

Solution: _____

e. $x^2-10x+10=0$

Solution: _____

f. $-\frac{8}{w+4}=-\frac{3}{2w+8}+2$

Solution: _____

g. $3(w-2)-5w=-2(w+3)$

Solution: _____

h. $5(2-v)-v=2(v+1)$

Solution: _____

i. $5w^2=-17w-6$

Solution: _____

j. $\frac{x+6}{x+4} = \frac{3x-6}{2x^2+7x-4} - \frac{x}{2x-1}$

Solution: _____

k. $x^3 = -9$

Solution: _____

l. $2x^2 + 5x - 1 = 0$

Solution: _____

3. Solve the following inequalities. Sketch the graph of the solution set and write your answer in interval notation.
   a. $-12 \leq 4x + 4 < 16$

      Interval notation

      Graph:

   b. $|u - 2| > 6$

      Interval notation

      Graph:

4. Find the x-intercept and y-intercept of the line $6x - 8y = -15$

x-intercept_____ y-intercept _____

5. Find equation of a line passing through $(-2,3)$ and parallel to the line $3x - 4y = 6$.

6. A small publishing company is planning to publish a new book. The production costs will include one-time fixed costs (such as editing) and variable costs (such as printing). The one-time fixed costs will total $76,322. The variable costs will be $10 per book. The publisher will sell the finished product to bookstores at a price of $25.50 per book. How many books must the publisher produce and sell so that the production costs will equal the money from sales?

7. Rueben's gas tank is $\frac{2}{5}$ full. After he buys 6 gallons of gas, it is $\frac{7}{10}$ full. How many gallons can Rueben's tank hold?

8. The sum of two numbers is 42. One number is two times as large as the other. What are the numbers?