## Section 2.5: AN INTRODUCTION TO PROBLEM SOLVING

When you are done with your homework you should be able to...

- $\pi$  Translate English phrases into algebraic expressions
- $\pi$  Solve algebraic word problems using linear equations

WARM-UP:

Solve:

A fax machine regularly sells for \$380. The sale price is \$266. Find the percent decrease in the machine's price.

## **ACTIVITY**

- 1. Get three index cards from the front table.
- 2. Find the people holding the matching cards.
- 3. Write the missing information on the other side of the card and fill in the table.

## ALGEBRAIC TRANSLATIONS OF ENGLISH PHRASES

ENGLISH PHRASE	ALGEBRAIC EXPRESSION
ADDITION	

MATH 830/GRACEY			2.5
SUB	TRACTION		
MUL	TIPLICATION		

N	MATH 830/GRACEY		
	DIVISION		
	MORE THAN ONE OPERATION		

## STEPS FOR SOLVING WORD PROBLEMS

1. Analysis: READ the problem. Then, the problem	n again!!!
Draw a and/or make a I	dentify
and name all known and unknown	
2. Translate to Mathese: Write an equation that translates, or	
the conditions of the problem.	
3. Solve: the equation. Then	your
solution.	
4. Conclusion: Write your result, in	

Example 1: Solve the following word problems.

1. The sum of a number and 28 is 245. Find the number.

2. Three times the sum of five and a number is 48. Find the number.

3. Eight subtracted from six times a number is 298. Find the number.

4. If the quotient of three times a number and four is decreased by three, the result is nine. Find the number.

5. A car rental agency charges \$180 per week plus \$0.25 per mile to rent a car. How many miles can you travel in one week for \$395?

2.5

6. A basketball court is a rectangle with a perimeter of 86 meters. The length is 13 meters more than the width. Find the width and length of the basketball court.

7. This year's salary, \$42,074, is a 9% increase over last year's salary. What was last year's salary?

8. A repair bill on a sailboat came to \$1603, including \$532 for parts and the remainder for labor. If the cost of labor is \$35 per hour, how many hours of labor did it take to repair the sailboat?