# § 2.2 An Introduction to Problem Solving

## General Strategy for Problem Solving

1) UNDERSTAND the problem. During this step, become comfortable with the problem. Some way of doing this are:
   - Read and reread the problem
   - Propose a solution and check.
   - Construct a drawing.
   - Choose a variable to represent the unknown
2) TRANSLATE the problem into an equation.
3) SOLVE the equation.
4) INTERPRET the result. *Check* the proposed solution in stated problem and *state* your conclusion.

The product of twice a number and three is the same as the difference of five times the number and ¾. Find the number.

3/4x

$\frac{3}{4}x$ = $\frac{3x}{4}$

Let x = the number.

The product of twice a number and 3 is the difference of five times the number & $\frac{3}{4}$

$3(2x) = 5x - \frac{3}{4}$

$6x = 5x - \frac{3}{4}$

Duh. Subtract 5x from both sides, Brock says.

3/4 → Bad

$\frac{3}{4}$ → Good.

LCD = 4

$4(6x) = 4(5x) - 4(\frac{3}{4})$

$24x = 20x - 3$

$4x = -3$

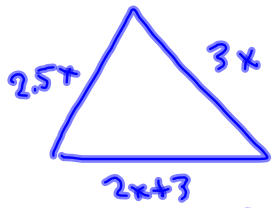
$x = -\frac{3}{4}$

**Age Problem** Today Henry is 7 years older than twice his age of 23 years ago. Find Henry's age today.

x = Henry's current age. (in yrs)  2(x-23)

$x = 7 + 2(x-23)$  Solve for x

A triangle has sides measuring $2.5x$ cm, $3x$ cm, and $(2x + 3)$ cm. It's perimeter measures 60 cm. Find the measures of the sides.




$2x+3+2.5x+3x = 60$

Solve for x.

HAND IN

#s 2.2 #s 24, 29, 42, 49, 67

Other Examples from the book and how to write them up (from the exercises).

(34) The sum of 3 consecutive odd integers is 327. Find the integers.

x = the smallest of the 3 consecutive odd integers.

$x + (x+2) + (x+4) = 327$ Solve for x.

§2.2 ALL Vocabulary & Readiness, Pg 62.

PRACTICE As many as you can or you need.

Hint on # 67.

75% of x means $\frac{75}{100}x$ or $.75x$

110% .. .. .. $\frac{110}{100}x$ or $1.10x$

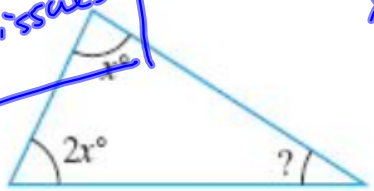
§2.3 hand in #s 20, 27, 42, 54

Next time: Be prepared to ROLL on 2.3 & 2.4

ALL the pink boxes written down with lots of space after them.

△ **49.** Find the measures of the angles of a triangle if the measure of one angle is twice the measure of a second angle and the third angle measures 3 times the second angle decreased by 12.

#s 27-32 good. I have ambiguity issues on #49




$x + 2x + ? = 180$

I hate this one.

Let $x$ = 1st angle

$x = 2y$

hmmmm.

2nd angle is $y$.

2nd, 1st, 3rd

$x$, $2x$, $3x-12$

$3(2x)-12$

$3(2x-12)$

BONUS

Find what the book means by #49

1 Free homework

65. China, the United States, and Russia are the countries with the most cellular subscribers in the world. Together, the three countries have 34.8% of the world's cellular subscribers. If the percent of world subscribers in China is 3.1 less than 4 times the percent of world subscribers in Russia, and the percent of world subscribers in the United States is 4.3% more than the percent of world subscribers in Russia, find the percent of world subscribers for each country. (*Source:* Computer Industry of America)