Math 60, Friday, 5/2

Q's on 2.4
Checkpoint # 5
New Material : 2.5

Mission 2 due next Wed May 7

Q's

77
57
59
17
19
65
45
23

17. $\cancel{2}\cdot\frac{c}{\cancel{2}} + 80 = 2F$, for c

$c + 160 = 4F$
$-160 \quad -160$

$c = 4F - 160$

19. $\frac{2}{1}\cdot A = \frac{1}{\cancel{2}}(a+b)$ for a

$2A = a + b$
$-b \quad -b$

$2A - b = a$

23. $\frac{2}{1}A = \frac{1}{2}h(a+b)$ for b

$\frac{2A}{h} = \frac{h(a+b)}{h}$

$\frac{2A}{h} = a + b$
$-a \quad -a$

$\frac{2A}{h} - a = b$

$2A = ha + hb$
$-ha \quad -ha$

$\frac{2A - ah}{h} = \frac{bh}{h}$

$\frac{2A - ah}{h} = b$

45. A what is B 3% of 200?

$A = PB$

$A = .03(200)$

$= 6$

$\frac{30}{50} = \frac{P(50)}{50}$

57. 5 increased to 8

The increase (3) is what % (P) of the original (5)

$A = PB$

$\frac{3}{5} = \frac{P(5)}{5}$

$\frac{3}{5} = P$

$.6 = P$

The percent increase was 60%

77. a) $\frac{41}{152}$ $\% = \frac{\text{part}}{\text{whole}}$

$= .269$

$\approx 27\%$

b) $\frac{89}{192}$

$\approx .463$

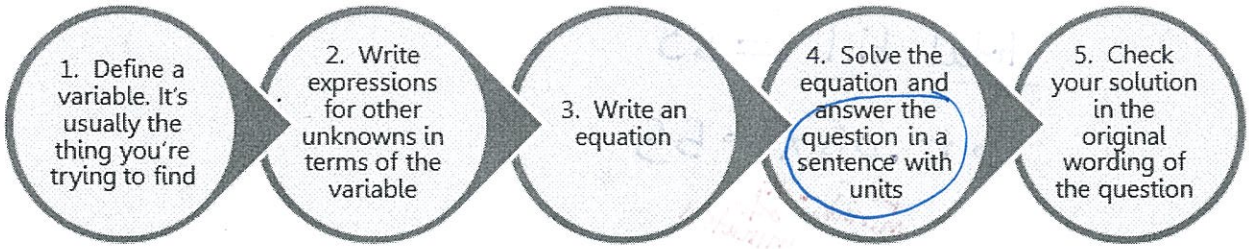
46%

c) Percent increase $\rightarrow$ $\frac{\text{A: Amount of increase}}{\text{B: original amount}}$

$\frac{89-41}{41}$

$= \frac{48}{41} = 117\%$

Problem Solving Process



There are five types of problems in this section:

Translation Problems – ***Use the chart on page 148***

1. Four times a number added to 7 times the number equals 44. Find the number.

Let x = the number

$4x + 7x = 44$

$\frac{11x}{11} = \frac{44}{11}$

$x = 4$

The number is 4.

Consecutive Integers: ***(x, x+1 and x+2)*** **or Consecutive Odd or Even Integers:** ***(x and x+2)***

2. The ages of Mario's children are consecutive integers. If the sum of the ages of his 3 kids is 18, how old are his children?

Let c = age youngest child = 5

c+1 = middle child = 6

c+2 = age of the oldest child = 7

$c + (c+1) + (c+2) = 18$

$c + c + 1 + c + 2 = 18$

$3c + 3 = 18$

$-3 \quad -3$

$\frac{3c}{3} = \frac{15}{3}$

$c = 5$

Mario's children are 5, 6 and 7 years old.

Linear Patterns – ***A flat fee plus a rate per mile/minute/etc.***

3. A promotional deal for a long distance phone service charges a $15 basic fee plus $0.05 per minute for all calls. If Joe's phone bill was $55 with this deal, how many minutes of calls did Joe make?

let X = # of minutes

total bill $= 55$

$15 + .05X = 55$

per minute · # of minutes

$-15 \quad -15$

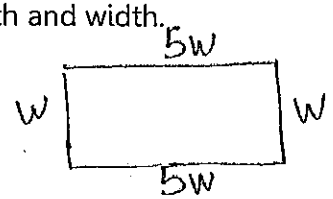
$\frac{.05X}{.05} = \frac{40}{.05}$

$X = 800$

Joe made 800 minutes of phone calls

Geometry – ***Draw a picture and label what you know!***

4. The length of a rectangle is five times the width. The perimeter is 144 inches. Find the length and width.



Let w = width

length $= 5w$

$5(12) = 60$

Perimeter $= 144$ in

$w + w + 5w + 5w = 144$

$\frac{12w}{12} = \frac{144}{12}$

$w = 12$

The width is 12 inches and the length is 60 inches.

Percents – ***Original amount plus the increase (or minus the decrease)***

5. This year's salary, $29,425, is a 7% increase over last year's salary. What was last year's salary?

Let X = last year's salary

This year = last year + 7% of last year

$29,425 = 1X + .07X$

$\frac{29,425}{1.07} = \frac{1.07X}{1.07}$

$27,500 = X$

Last year's salary was $27,500.

Try it! Determine the type of problem and solve.

A. During the 2002 Houston Bowl, Oklahoma State beat Southern Miss by 10 points. If their combined scores totaled 56, find the points scored by each team.

Let x = score of Southern Miss. $x=23$

$x+10$ = score of OK State $x+10=23+10=33$

Combined scores = 56

$x + x+10 = 56$

$2x+10=56$

$-10 \quad -10$

$\frac{2x}{2} = \frac{46}{2}$

$x=23$

Southern Miss scored 23 points and OK St. scored 33 points.

B. Two page numbers in your math book are consecutive even integers. If the sum of the two page numbers is 314, what are the page numbers?

let x = 1st page $x=156$

$x+2$ = 2nd page $x+2=158$

The two pages are 156 and 158.

$x + x+2 = 314$

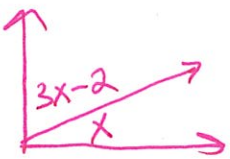
$2x+2=314$

$-2 \quad -2$

$\frac{2x}{2} = \frac{312}{2}$

$x = 156$

C. Two angles are complementary if their sum is 90 degrees. If the measure of the first angle is x degrees, and the measure of the second angle is (3x-2) degrees, find the measure of each angle.



let x = 1st angle

$3x-2$ = 2nd angle

$x + 3x-2 = 90^\circ$

$4x-2=90$

$+2 \quad +2$

$\frac{4x}{4} = \frac{92}{4}$

$x = 23^\circ$

2nd angle:

$3(23)-2$

$=69-2$

$=67^\circ$

The two angles are 23° and 67°.

D. Write your own word problem(s) using a subject that is relevant to you. Then show the equation and solution.

Bonus points!