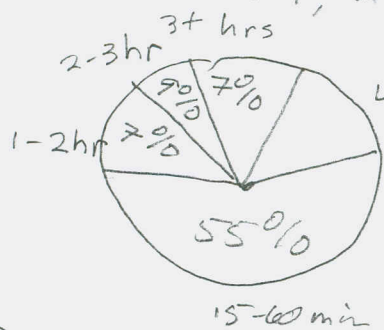


§ 2.2 #s 24, 29, 42, 49, 67

MAT 099 § 2.2



less than 15 min

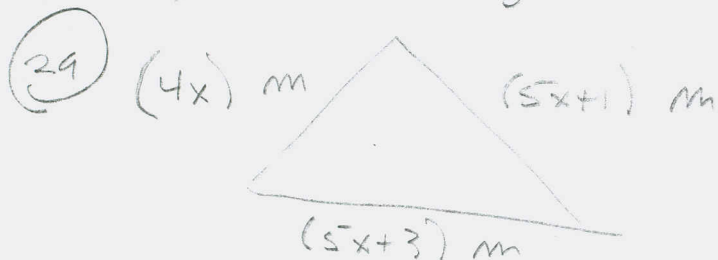
Time spent on e-mail per day
(a) work

(24) See pie chart. 278 employees. How many spend 2 to 3 hrs in e-mail land? (Nearest person)

$$9\% \text{ of } 278 \text{ is } (.09)(278) = 25.02$$

So, 25 people spend 2-3 hrs per day

#s 27-32 Use the diagram to find the unknown angles or lengths



Given:

Perimeter is 102 m

Find the length of each side.

$$4x + (5x+1) + (5x+3) = 102$$

$$14x + 4 = 102$$

$$14x = 98$$

$$x = 7 \text{ m}$$

$$4x = 28 \text{ m}$$

$$5x+1 = 5(7)+1 = 36 \text{ m}$$

$$5x+3 = \dots = 38 \text{ m}$$

(42) The CA gov. makes \$27,500 more than NY gov.
 " " " " \$120,724 " " AK gov.
 The sum of the salaries is \$471,276. Find the salaries.

MAT 099 § 2.2 #5 42,49,67

(42) Cont'd

Let $x =$ CA gov's salary (in \$)

$y =$ NY " " (in \$)

$z =$ AK " " " "

$$\text{Then } x = y + 27,500 \rightarrow y = x - 27,500$$

$$x = z + 120,724 \rightarrow z = x - 120,724$$

$$\text{Also, } x + y + z = 471,276$$

$$\text{So } x + (x - 27,500) + (x - 120,724) = 471,276$$

$$\Rightarrow 3x - 148,224 = 471,276$$

$$3x = 619,500$$

$$x = 206,500 \quad x \quad \$ 206,500$$

is CA gov's salary;

$$y = x - 27,500 = 206,500 - 27,500$$

$$= \$ 179,000 \quad \text{is NY gov's salary}$$

$$z = x - 120,724 = 206,500 - 120,724$$

$$= \$ 85,776 \quad \text{is AK gov's salary.}$$

MAT 099 S 2.2 #549, 67

(2)

(49) one angle is twice the measure of a 2nd angle.
The 3rd angle is three times the second angle,
decreased by 12. AHHH. MY BRAIN-FLATULENCE PROBLEM.

Let $x = 2^{\text{nd}}$ angle (in degrees)

$y = 1^{\text{st}}$ " " " "

$z = 3^{\text{rd}}$ " " " "

Then $y = 2x$ and $x + y + z = 180$

$$z = 3x - 12$$

$$x + (2x) + (3x - 12) = 180$$

$$6x - 12 = 180$$

$$6x = 192$$

$$x = \frac{192}{6} = 32^\circ = x$$

$$y = 2(32) = 64^\circ = y$$

$$z = 3(32) - 12 = 96 - 12 = 84^\circ = z$$

What threw me in class was, my wanting to naturally let x be the 1st angle. And then, when the 3rd angle was in terms of the 2nd, I got brain-lock, because I wanted one equation in x .

MAT 099 §2.2 #67

(67) The final book is 784 pgs. This is a 15.4% increase over the first book. How many pages is the first book.

Let $x =$ the # of pages in 1st book.
 15.4% of x is $1.54x$. So, the final book has $x + 1.54x$ pages:

$$x + 1.54x = 784$$

$$2.54x = 784$$

$$x = \frac{784}{2.54} \approx 308.6614173$$

$$\approx \boxed{309 \text{ pages in 1}^{\text{st}} \text{ book.}}$$

EXAMPLE After a 7% increase, a bank account held \$321. How much was in the account, originally?

Let $x =$ original amt in account (\$)

Then $x + .07x = 321$

$$(1 + .07)x = 321$$

$$1.07x = 321$$

$$x = \frac{321}{1.07}$$

$$= \boxed{\$300 \text{ is original amt.}}$$