$$-\frac{4}{3} \cdot -\frac{3}{4}x = \overset{7}{\cancel{21}} \cdot \frac{-4}{\cancel{3}_1}$$

$$\boxed{x = -28}$$

$$\frac{2}{5}x - 10 = 20$$

$$+10 \qquad +10$$

$$\frac{5}{2} \cdot \frac{2}{5}x = \frac{\overset{15}{\cancel{30}}}{1} \cdot \frac{5}{\cancel{2}_1}$$

$$\boxed{x = 75}$$

$$-32 + \frac{2}{3}x = \boxed{2\frac{1}{3}}x + 3$$

$$-32 + \frac{2}{3}x = \frac{7}{3}x + 3$$

$$-\frac{2}{3}x \qquad -\frac{2}{3}x$$

$$-32 = \frac{5}{3}x + 3$$
$$-3 \qquad\qquad -3$$

$$\frac{3}{5} \cdot \frac{-35}{1} = \frac{3}{5} \cdot \frac{5}{3}x$$

$$\boxed{-21 = x}$$

$$8x - (-7 + 5x) = 11 + x$$

$$8x + 7 - 5x = 11 + x$$

$$3x + 7 = 11 + x$$
$$-x \qquad\qquad -x$$

$$2x + 7 = 11$$
$$2x = 4$$
$$x = 2$$

$$15 - \frac{7}{12}x = \frac{9}{12}x - 1$$

$$+\frac{7}{12}x \qquad +\frac{7}{12}x$$

$$15 = \frac{16}{12}x - 1$$

$$\frac{12}{16} \cdot \frac{16}{1} = \frac{12}{16} \cdot \frac{16}{12}x$$

$$\boxed{12 = X}$$

WRITE AN EQUATION AND SOLVE

Five times the sum of a third of a number plus 20 equals 400.

$$5\left(\frac{1}{3}x + 20\right) = 400$$

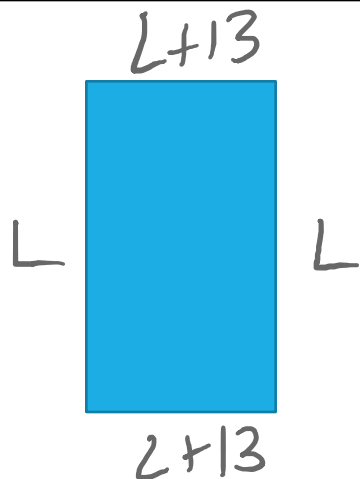$$\frac{1}{3}x + 20 = 80$$

$$3 \cdot \frac{1}{3}x = 60 \cdot 3$$

$$x = 180$$

$$\frac{5}{3}x + 100 = 400$$

$$\frac{3}{5} \cdot \frac{5}{3}x = 300 \cdot \frac{3}{5}$$

$$x = 180$$

PERIMETER

$L+13$

L　L

$L+13$

$W = 34.5$

Millie is planning to use exactly 112 feet of fencing as the border of a rectangular garden. If the width of the garden is 13 of the length of the garden, what is the width of the garden?

Hint: let L be the length of the garden. Draw a picture.

ft longer then

① $L = \dfrac{112 - 26}{4}$

② $2L + 2(L+13) = 112$

③ $4L + 26 = 112$

$L = 21.5$

EQUAL COST

$$376 + 12(32) = \$760$$

$$280 + 15(32) = \$760$$

A house painting company charges $376 plus $12 per hour.
Another painting company charges $280 plus $15 per hour.

$$376 + 12x = 280 + 15x$$

a. How long is a job for which both companies will charge the same amount?

(32) hours

b. What will that cost be?

$760

AGE PROBLEM

Chris = 24
Dana = 11
Mary = 27

Mary is 16 years older than Dana and Dana is 13 years younger than Chris. if the sum of their ages is 62, find each person's age.

Chris = C

Dana = C − 13

Mary = C + 3

$$C + C - 13 + C + 3 = 62$$

$$3c - 10 = 62$$

$$3c = 72$$

$$C = 24$$

CONSECUTIVE NUMBER PROBLEM

180, 181, 182

Find three consecutive numbers whose sum is 543.

X = smallest #

$X + 1$ = middle #

$X + 2$ = largest #

$$X + X + 1 + X + 2 = 543$$

$$3x + 3 = 543$$

$$3x = 540$$

$$x = 180 \rightarrow \text{smallest \#}$$

ANOTHER WORD PROBLEM

You and your friend both bought some gum. Your friend spent three times as much as you did. Altogether, you spent $4.80. How much did you each spend on gum?

$$x + 3x = 4.80$$

$$\frac{4x}{4} = \frac{4.80}{4}$$

$1.20 = me

$3.60 = friend

AGE PROBLEM

In 16 years, Lilly will be 5 times as old as she is now. How old is Lilly now?

$$16 + x = 5x$$
$$-x \quad\quad -x$$
$$\frac{16}{4} = \frac{4x}{4}$$

Lilly is 4 y/o

CONSECUTIVE NUMBERS

$43 + 44$

The sum of two consecutive numbers is 87. What are the numbers?

$$n + n + 1 = 87$$
$$-1 \qquad -1$$
$$\frac{2x}{2} = \frac{86}{2}$$
$$x = 43$$

Mr. Young's class did a food drive. Brad brought some cans. Brittany brought twice as many cans as Brad. Belinda brought 7 more cans than Brad. They brought 27 cans total. Set up an equation and solve it to find out how many cans Brad brought.

$$B + 2B + B + 7 = 27$$

$$4B + 7 = 27$$

$$B = 5$$

Brad brought 5 cans

If the perimeter of the triangle is 38, find the value of x.
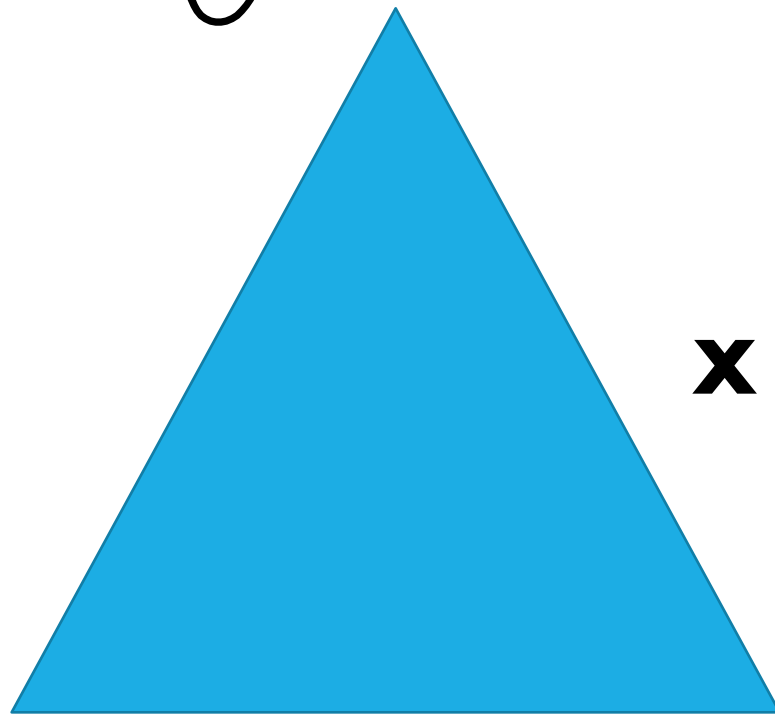
$4x + 10x - 5 + x + 13 = 38$

$15x + 8 = 38$

$15x = 30$

$x = 2$

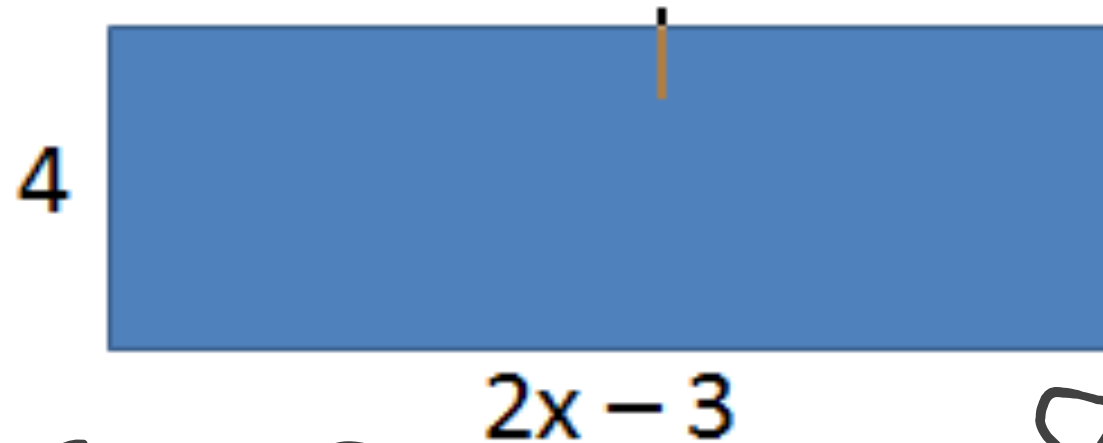10x – 5

x + 13

4x

If the **area** of the rectangle is 44, find the value of x:

4

2x − 3

$4(2x-3) = 44$

$8x - 12 = 44$

$x = 7$

Cool Down

$$5(x - 20) = \frac{1}{2}(4x + 4)$$

$5x - 100 = 2x + 2$

$\quad +100 \qquad\qquad +100$

$5x = 2x + 102$

$-2x \qquad\quad -2x$

$3x = 102$

$x = 34$