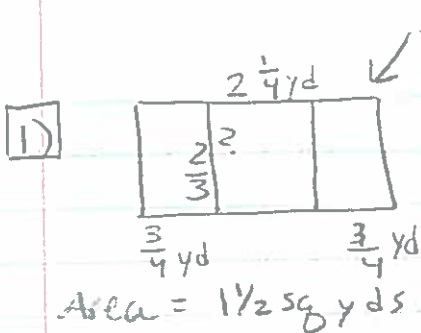A#7 N.S. Word Problems #1

Area ÷ base
$1\frac{1}{2} \div 2\frac{1}{4}$
$\frac{3}{2} , \frac{4}{9}$
$\frac{2}{3}$ yds.

Another way

1)
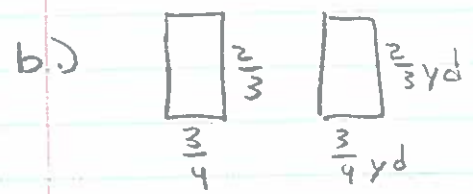
Important Info is labeled on picture

$2\frac{1}{4}$ yd

$\frac{2}{3}$?

$\frac{3}{4}$ yd $\frac{3}{4}$ yd

Area = $1\frac{1}{2}$ sq yds.

Area = base × height
$1\frac{1}{2} = 2\frac{1}{4} \times$ Height
$\dfrac{1\frac{1}{2}}{2\frac{1}{4}} = \dfrac{2\frac{1}{4} \times \text{Height}}{2\frac{1}{4}}$
$\frac{2}{3} =$ Height

$\frac{3}{2} \div \frac{9}{4}$
$\frac{3}{2} \cdot \frac{4}{9} = \frac{2}{3}$
$\frac{2}{1} \cdot \frac{4}{9} \cdot 3$

a. The height of the banner is $\frac{2}{3}$ yds.

b.)

$\frac{2}{3}$ $\frac{2}{3}$ yd

$\frac{3}{4}$ $\frac{3}{4}$ yd

The yellow rectangles take up 1 sq. yd.
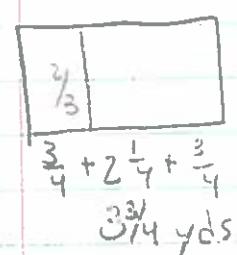
A yellow = base × height
$A_y = \frac{3}{4} \cdot \frac{2}{3}$
$A_y = \frac{1}{2}$ sq yds.
$+ A_y = \frac{1}{2}$ sq yds
_____
1 sq yd.

c.) The whole banner will be $3\frac{3}{4}$ yds by $\frac{2}{3}$ yds.
The total area will be $2\frac{1}{2}$ square yards.

(Area) = (length)(width)

$\frac{2}{3}$

$\frac{3}{4} + 2\frac{1}{4} + \frac{3}{4}$
$3\frac{3}{4}$ yds

$A = 3\frac{3}{4} \cdot \frac{2}{3}$
$A = \frac{15}{4} \cdot \frac{2}{3}$
$A = 5\frac{1}{2}$
$A = 2\frac{1}{2}$

2) $54 mowing lawns
$2\frac{1}{2}$ hours yesterday
$4\frac{1}{4}$ hours today
? Earnings Per hour

Naomi earns $8 per hour.

$\dfrac{\$}{\text{Hours}}$

①
$\dfrac{54}{2\frac{1}{2} + 4\frac{1}{4}}$

$\dfrac{54}{6\frac{3}{4}}$

$54 \div 6\frac{3}{4}$
$54 \div \frac{27}{4}$
$54 \times \frac{?}{4}$
$\boxed{8}$ $\frac{27}{1}$

OR

②
(mowing lawns) ÷ (# hrs yesterday + #)
$54 \div (2\frac{1}{2} + 4\frac{1}{4})$
$54 \div (2\frac{2}{4} + 4 \cdot)$
$54 \div 6\frac{3}{4}$
$54 \div \frac{27}{4}$
$\dfrac{54}{1} \cdot \dfrac{4}{27}$
$\boxed{8}$

3| $\frac{3}{5}$ pound of clay (1 piece)

$\frac{7}{10}$ pound of clay (other piece)

$\frac{4}{5}$ pound (3 bags of clay)

? how many bags of clay needed

? how many pounds of clay left over?

$\left(\overset{1}{clay} + \overset{2}{clay}\right) \div 1bag$

$\frac{3}{5} + \frac{7}{10} \div \frac{4}{5}$

$\frac{6}{10} + \frac{7}{10} \div \frac{4}{5}$

$\frac{13}{10} \div \frac{4}{5}$

$\frac{13}{\cancel{10}2} \cdot \frac{\cancel{8}1}{4}$

$\frac{13}{8}$

$\frac{4}{10}$ bags needed

$3\left(\frac{4}{5}\right) = 2\frac{x}{5}$ lb's of clay in 3 bags

$\underline{-1\frac{3}{10}}$ lb's of clay needed

$1\frac{1}{10}$ lb's left over

Eva needs 1⅝ bags of clay. She will have 1 1/10 lb left over.

4| $1\frac{1}{2}$ pounds Red clay

$\frac{3}{4}$ pound yellow clay

$\frac{1}{8}$ needed each class

How many students?

$(Red clay + yellow clay) \div \left(\overset{Each}{Student}\right)$

$\left(1\frac{1}{2} + \frac{3}{4}\right) \frac{9}{9} \frac{1}{8}$

$1\frac{5}{4} \div \frac{1}{8}$

$\frac{9}{\cancel{4}} \cdot \frac{\cancel{8}2}{1}$

$\boxed{18}$

Only 18 students can use clay for their art project.

⊘

5. $1\frac{1}{3}$ gallons yellow

$1\frac{1}{4}$ gallons green

$\frac{7}{8}$ gallons blue

$\frac{3}{4}$ gallons of each color

How many gallons left over?

$1\frac{1}{3} - \frac{3}{4}$

$\times\frac{4}{12}^{16} - \frac{9}{12}$

$\frac{7}{12}$ left

(green) – (used)

$1\frac{1}{4} - \frac{3}{4}$

$\frac{5}{4} - \frac{3}{4}$

$\frac{2}{4}$ left

$\left(\text{green}\atop\text{left}\right) + \left(\text{blue}\atop\text{left}\right) + \left(\text{yellow}\atop\text{left}\right)$

$\frac{7}{12} + \frac{3}{4} \cdot \frac{1}{2}$

$+ \frac{8}{10} \cdot \frac{3}{2}$

$\frac{24}{15}\cdot\frac{1}{24}$

$-\frac{1}{12} \quad \frac{12}{2}\cdot\frac{1}{2}$

Mark will have $\frac{7}{12}$ of a gallon of yellow, $\frac{1}{2}$ of a gallon of green and $\frac{1}{8}$ of a gallon of blue paint leftover. This is a total of $1\frac{5}{24}$ gallons of paint leftover.

(blue) – (used)

$\frac{7}{8} - \frac{3}{4}$

$\frac{7}{8} - \frac{6}{8}$

$\frac{1}{8}$ left.

6. 120 words per minute

1.75 minutes

? How many total words?

$\left(\text{words}\atop\text{per min}\right)\left(\#\text{ of}\atop\text{minutes}\right)$

$120(1.75)$

$\boxed{210}$

Dorothy typed 210 words in 1.75 minutes.

1.75
$\times 120$
$\overline{3500}$
17500
$\overline{210.00}$

7. $1.20 per pound (apples)

$\frac{3}{4}$ lb boughts

How much spent?

$\left(\$\text{ per pound}\right)\left(\text{pound}\right)$

$1.20\left(\frac{3}{4}\right)$

$1.20(.75)$

$\boxed{.90}$

Logan spent 90¢ on apples.

1.20
$\times .75$
$\overline{600}$
$+8400$
$\overline{.9000}$

8.) $4\frac{2}{3}$ cups popcorn

$1\frac{1}{4}$ cups peanuts

$1\frac{1}{3}$ cups raisins

$\frac{3}{4}$ cup sunflower seeds

5 friends given mix.

How much did each get?

$\left(\text{pop+pean+rais+seed}\right) \div \text{friends}$

$\left(4\frac{2}{3} + 1\frac{1}{4} + 1\frac{1}{3} + \frac{3}{4}\right) \div 5$

$\left(4\frac{8}{12} + 1\frac{3}{12} + 1\frac{4}{12} + \frac{9}{12}\right) \div 5$

$6\frac{24}{12} \quad \cdot\frac{1}{5}$

$\frac{8}{1} \cdot \frac{1}{5}$

$\boxed{1\frac{3}{5}}$

Each of his friends will get $1\frac{3}{5}$ cups of trail mix.

9.) $3.25 hour walking dogs
⅓ of an hour morning
½ hour in the afternoon

a.) How much time spent?
Carl walked them 5/6 of
an hour ever day.

(morn) + (after)
⅓ + ½
2/6 + 3/6
5/6 of an hour

b.) How much time per week?

Carl spent 5⅚ hours
walking the dogs in
a week.

$$\left(\begin{array}{c}\text{total per}\\\text{day}\end{array}\right)\left(\begin{array}{c}\text{\# of}\\\text{days week}\end{array}\right)$$

$$\frac{5}{6} \cdot \frac{7}{1}$$

$$\frac{35}{6}$$

$$5\frac{5}{6}$$

c. 10 minutes is ⅙ of an hour.
how many minutes walking?

Carl walks the dogs for
350 minutes

$$\left(\text{total}\right) \div \left(\begin{array}{c}⅙\\\text{10 minuts}\end{array}\right)$$

$$5\frac{5}{6} \div \frac{1}{6}$$

$$\frac{35}{6} \cdot \frac{6}{1}$$

$$35 \ (\text{10 minute})$$

D. how much earned in a week?

Carl earns about $18.96 by walking
dogs each week.

$$35(10) = 350$$

$$\left(\begin{array}{c}\text{hours}\\\text{walked}\end{array}\right)\left(\begin{array}{c}\$\\\text{per}\\\text{hour}\end{array}\right)$$

$$5\frac{5}{6} \cdot (\$3.25)$$

$$\frac{35}{6} \cdot \frac{3.25}{1}$$

$$\frac{113.75}{6}$$

$$\approx 18.96$$