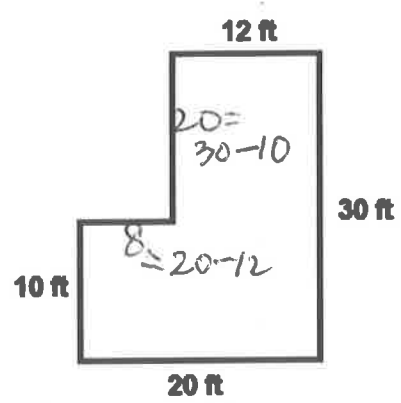


1. Find the perimeter of the room below:



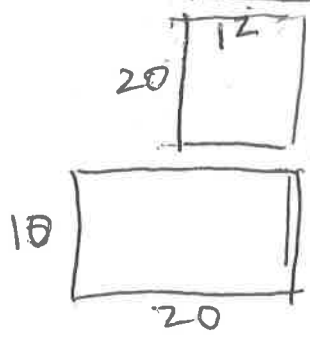
Direct Method
 $P = 12 \text{ ft}$
 30
 20
 10
 8
 20

 100 ft

"Contractor's" Method
 $P = 2(20) + 2(30)$
 $= 40 + 60 =$
 100 ft

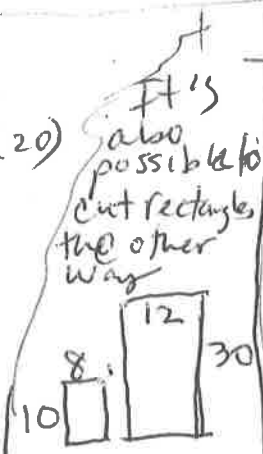
2. Find the area of the room above.

Addition Method



$A = (20)(12) + (10)(20)$
 $= 240 + 200$
 $= 440 \text{ ft}^2$
 or 440 sq. ft

Subtraction Method



$A = (30)(20)$
 $- (20)(8)$
 $= 600$
 $- 160$

 440 ft^2
 or 440 sq. ft.

3. Translate to algebra and solve: The product of 5 and a number decreased by 29 results in 6.

$5 \cdot n - 29 = 6$ ← translate

$5n - 29 = 6$
 $+29 \quad +29$

$5n = 35$

$n = 7$ ← solve

4. Write in lowest terms: $\frac{30x^3y}{42y^2}$

Divide by 6

$\frac{30 \cdot x \cdot x \cdot x \cdot y}{7 \cdot y \cdot y}$

$= \frac{5x^3}{7y}$

5. For the word problem: "A charity received 8 crates with cans of soup; 321 cans were given away, and 63 cans were left. How many cans were in each crate?"

a) Let n = the number of cans in a crate, and write an equation which relates the number of cans per crate to the information above.

$$8n = 321 + 63$$

$$\begin{array}{r} 321 \\ 63 \\ \hline 384 \end{array}$$

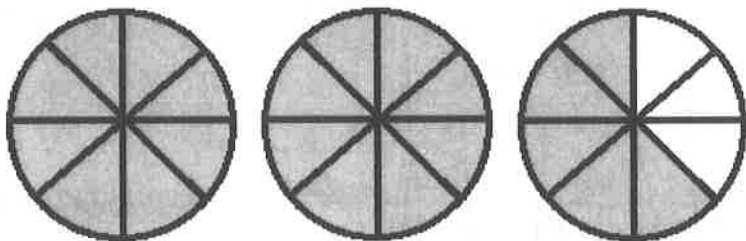
b) Solve the equation to find the number of cans in each crate.

$$8n = 384$$

$$n = \frac{384}{8} = 48 \text{ cans}$$

$$\begin{array}{r} 48 \\ 8 \overline{)384} \\ \underline{32} \\ 64 \\ \underline{64} \\ 0 \end{array}$$

6. Write the mixed number and the improper fraction represented by the shaded area:



Mixed Number:

$$2\frac{5}{8}$$

Improper Fraction:

$$\frac{2 \times 8 + 5}{8} = \frac{21}{8}$$

7. Convert to a mixed number: $\frac{88}{7}$

$$\begin{array}{r} 12 \\ 7 \overline{)88} \\ \underline{7} \\ 18 \\ \underline{14} \\ 4 \end{array} = 12\frac{4}{7}$$

8. For the product: $\left(1\frac{2}{3}\right) \cdot \left(4\frac{1}{5}\right)$

a) Estimate the product

$$\sim 2.4 = 8$$

b) Find the exact value

$$1\frac{2}{3} \rightarrow \frac{1 \times 3 + 2}{3} = \frac{5}{3}$$

$$4\frac{1}{5} \rightarrow \frac{4 \times 5 + 1}{5} = \frac{21}{5}$$

$$\begin{array}{l} \text{divide by 5} \\ \text{divide by 3} \end{array} \quad \begin{array}{l} 1 \quad 7 \\ \left(\frac{5}{3}\right) \left(\frac{21}{5}\right) = \frac{7}{1} = 7 \end{array}$$

9. Simplify: $6 \div \frac{18}{5}$

improper OK
divide by 6

$$6 \cdot \frac{5}{18} = \frac{5}{3}$$

10. There are 400 stores at a mall, and $\frac{3}{20}$ of the stores are being remodeled. How many stores are being remodeled?

$$\frac{400}{1} \cdot \frac{3}{20} \quad \text{or} \quad \frac{3}{20} \cdot \frac{400}{1}$$

divide
by 20

$$20 \cdot 3 = 60 \text{ stores}$$

11. A bag of chips contains 12 ounces. If each serving is $\frac{3}{4}$ ounce, how many servings are in the bag?

$$12 \div \frac{3}{4} = \frac{12}{1} \cdot \frac{4}{3} = 16 \text{ servings}$$

divide by 3

12. Eli has $\frac{3}{4}$ cup butter and uses $\frac{1}{3}$ cup. How much butter is left?

$$\frac{3}{4} - \frac{1}{3} = \frac{9}{12} - \frac{4}{12} = \frac{5}{12} \text{ cup}$$

13. Solve: $y + \frac{5}{16} = \frac{3}{4}$

Method 1 - isolate y

$$y = \frac{3}{4} - \frac{5}{16}$$

$$y = \frac{12}{16} - \frac{5}{16} = \frac{7}{16}$$

Method 2 - Get rid of denominators

$$y + \frac{5}{16} = \frac{3}{4} \quad (\cdot 16)$$

$$16y + 5 = 12$$

$$16y = 7, \quad y = \frac{7}{16}$$

14. Simplify the complex fraction:

$$\frac{\frac{7}{15}}{\frac{4}{5}} \cdot \frac{7}{15} \cdot \frac{5}{4} = \frac{7}{12}$$

15. Find the area of the triangle whose base is 10 inches and height is $\frac{4}{5}$ inch.

$$A = \frac{1}{2} b \cdot h$$

divide by 5
divide by 2

$$= \frac{1}{2} \left(\frac{10}{1} \right) \left(\frac{4}{5} \right)$$

$$= \frac{4}{1} = 4 \text{ in}^2 \text{ or } 4 \text{ sq. inches}$$

16. Round 61.274 to the nearest:

a) tenth $\overset{\uparrow}{61.3}$

b) hundredth 61.27

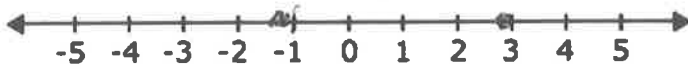
c) ten 60, or 60
(no point)

17. Convert the decimal to a fraction, and reduce if needed:

a) $0.05 = \frac{5}{100} \div 5 = \frac{1}{20}$

b) $4.29 = 4\frac{29}{100}$ or $\frac{429}{100}$

18. Graph the decimals on a number line (approximately)



a) 2.89

b) -1.2

19. Simplify: $6.7 + 21 + 0.89$

$$\begin{array}{r} 6.7 \\ 21. \\ \underline{0.89} \\ 28.59 \end{array}$$

20. Sam pays \$62.47 for a pair of shoes using a \$100 bill. How much change is given back?

$$\begin{array}{r} 999 \\ 100.00 \\ - 62.47 \\ \hline \$ 37.53 \end{array}$$

check:

$$\begin{array}{r} 37.53 \\ + 62.47 \\ \hline 100.00 \end{array}$$

