1. Organize the prices below from lowest to highest unit rate.

careful!! →

355 mL of pop	$0.44
2 L of pop	$1.39
1 L of pop	$0.64

2. Jennifer is making a punch for her mother's birthday. The recipe calls for 2 cups of ginger ale, 4 cups of Sprite and, 5 cups of lemonade. If Jennifer needs to fill a punch bowl that holds 25 cups, how much of each will she need?

3. Tanya is a nurse. she needs to measure and administer the correct dose of medicine to her patients. 150 mg of medicine must be dissolved into 275 mL of water. If the patient requires a dose of 500 mg of medicine, how much water is needed? Round to the nearest millilitre.

1. Organize the prices below from lowest to highest unit rate.

355 mL of pop	$0.44
2 L of pop	$1.39
1 L of pop	$0.64

Convert 355 ml to litres

→ 355/ 1000 = 0.355 L

$0.44	$1.39	$0.64
0.355L	2L	1L
= $1.24/L	= $0.70/L	= $0.64/L

1L $0.64 → = $0.64/L

2L $1.39 → = $0.70/L

355ml $0.44 → = $1.24/L

2. Jennifer is making a punch for her mother's birthday. The recipe calls for 2 cups of ginger ale, 4 cups of Sprite and, 5 cups of lemonade. If Jennifer needs to fill a punch bowl that holds 25 cups, how much of each will she need?

Batch Total

# of ginger ale = 2
# of Sprite = 4
# of lemonade = 5

Total # = 11

Total Ratio

Let x = ginger ale

$$\frac{\text{ginger ale}}{\text{total}}$$

$$\frac{2}{11} = \frac{x}{25}$$

$$\frac{11x}{11} = \frac{50}{11}$$

$x = 4.5$ cups

Total Ratio

Let y = Sprite

$$\frac{\text{Sprite}}{\text{Total}}$$

$$\frac{4}{11} = \frac{y}{25}$$

$$\frac{11y}{11} = \frac{100}{11}$$

$y = 9.1$ cups

Total Lemonade

$25 - 4.5 - 9.1$

$= 11.4$ cups

3. Tanya is a nurse. She needs to measure and administer the correct dose of medicine to her patients. 150 mg of medicine must be dissolved into 275 mL of water. If the patient requires a dose of 500 mg of medicine, how much water is needed? Round to the nearest millilitre.

Let x = Water

Medicine (mg)
Water (mL)

$$\frac{150}{275} = \frac{500}{x}$$

$$\frac{150x}{150} = \frac{137\,500}{150}$$

$x = 916.7$ mL of water

Let x = water

$$\frac{\text{Water}}{\text{Medicine}}$$

$$\frac{275}{150} = \frac{x}{500}$$

$$\frac{150x}{150} = \frac{137\,500}{150}$$

$x = 916.7$ mL of water

Homework

① ginger ale = 8
grenadine = 1
Total = 9

Let x = ginger ale

$\frac{\text{ginger ale}}{\text{total}}$

$\frac{8}{9} = \frac{x}{12}$

$9x = 96$

x = 10.7 ounces of ginger ale.

Amount of grenadine:

12 - 10.7 = 1.3

1.3 ounces of grenadine

② Total weight = 24g

Cost = $1200

a) Let x = cost of bracelet

$$\frac{\text{Cost}}{\text{Total Weight}}$$

$$\frac{1200}{24} = \frac{x}{10}$$

$$\frac{24x}{24} = \frac{12000}{24}$$

x = $50 for the 10g bracelet

b) gold = 18g
metal = 6g
Total = 24g

Let x = gold

$$\frac{\text{gold}}{\text{total}}$$

$$\frac{18}{24} = \frac{x}{10}$$

$$\frac{24x}{24} = \frac{180}{24}$$

x = 7.5g of gold

Amount of metal:

10 - 7.5 = 2.5g

2.5 g of metal alloy

③ Let x = the distance traveled

$$\frac{\text{distance}}{\text{gas}}$$

$$\frac{208}{5} = \frac{x}{11}$$

$$\frac{5x}{5} = \frac{2288}{5}$$

$$x = 457.6 \text{ km}$$

④ Let x = cost

$$\frac{\text{cans}}{\text{cost}}$$

$$\frac{6}{\$2.09} \Rightarrow \frac{32}{x}$$

$$\frac{6x}{6} = \frac{66.88}{6}$$

$$x = \$11.15$$

⑤ wins = 27

losses = 17

total = 44

Let x = the number of wins

$\frac{\text{wins}}{\text{total}}$

$\frac{27}{44} = \frac{x}{80}$

$\frac{44x}{44} = \frac{2214}{44}$

$x = 50.3$

x = 50 wins

⑥ Let x = the amount of tax

$$\frac{\text{tax}}{\text{cost}}$$

$$\frac{2.06}{25} = \frac{x}{45}$$

$$\frac{25x}{25} = \frac{92.7}{25}$$

$$x = \$3.71 \text{ in tax}$$

7. wins = 6
losses = 3
ties = 1
total = 10

a) $\frac{\text{wins}}{\text{total}} = \frac{6}{10} = \frac{3}{5}$

b) $\frac{\text{losses}}{\text{total}} = \frac{3}{10}$

c) $\frac{\text{ties}}{\text{total}} = \frac{1}{10}$

d) Let x = wins

$\frac{\text{wins}}{\text{total}}$

$\frac{6}{10} = \frac{x}{50}$

$\frac{10x}{10} = \frac{300}{10}$

x = 30 wins

Let y = losses

$\frac{\text{losses}}{\text{total}}$

$\frac{3}{10} = \frac{x}{50}$

$\frac{10x}{10} = \frac{150}{10}$

x = 15 losses

50 - 30 - 15
= 5 ties

e) Let x = wins

$\frac{\text{wins}}{\text{total}}$

$\frac{6}{10} = \frac{x}{82}$

$\frac{10x}{10} = \frac{492}{10}$

x = 49 wins

Let y = losses

$\frac{\text{losses}}{\text{total}}$

$\frac{3}{10} = \frac{x}{82}$

$\frac{10x}{10} = \frac{246}{10}$

x = 25 losses

82 - 49 - 25
= 8 ties