Unit Price

Unit Price

The cost of one unit; a rate expressed as a fraction in which the denominator is 1.

Example:

Five JMH mugs cost $15.25.

The unit price is :

$$\frac{\$15.25}{5} = \$3.05/\text{mug}$$

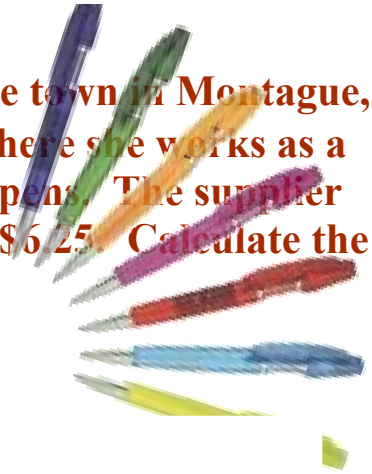
Remember !!

Price

Unit

Example 1:

Rosa buys supplies for the town in Montague, Prince Edward Island, where she works as a clerk. She wants to buy pens. The supplier sells a box of 12 pens for $6.25. Calculate the unit price of 1 pen.



$$\text{Unit Price} = \frac{6.25}{12}$$

$$= \$0.52/\text{pen}$$

Example 2:

Claire picks fresh strawberries at a U-pick farm in Deep Bight, Newfoundland. If she fills a pint basket (0.5506 litres), it will cost her $1.50. If she fills a 4-litre ice cream pail, it will cost $9.00. Which size of container will give her a better buy?

Pint Basket

$$\text{Price per Unit} = \frac{1.50}{0.5506}$$

$$= \$2.72/\text{litre}$$

4-litre Pail

$$\text{Price per Unit} = \frac{9.00}{4}$$

$$= \$2.25/\text{litre}$$

Unit Rate

The rate or cost for one item or unit.

Example:

A factory manager knows that he can produce 24 000 JMH mugs in an 8 hour shift. How many can he produce in just 1 hour?

The unit rate is:

$$\frac{24\,000}{8} = 3000 \text{ mugs/h}$$

Pages 26 and 27.
Questions 1 to 7.

Proportional Reasoning

1. Let x = # of minutes

Words
minutes

$$\frac{105}{1} = \frac{3200}{x}$$

$$105x = 3200$$

$$x = 30.5 \text{ words}$$

2. Let x = Oil

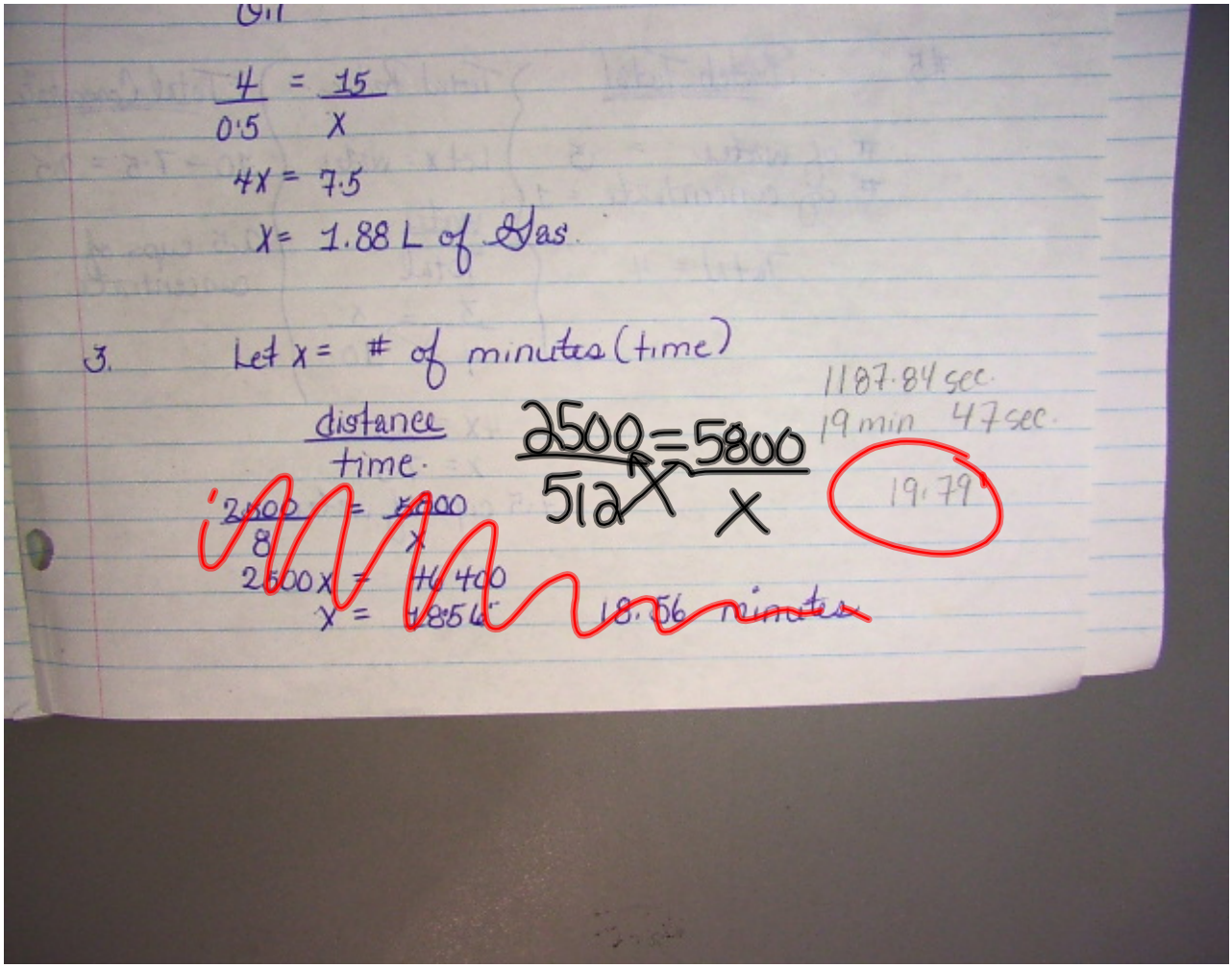
Gas
Oil

$$\frac{4}{0.5} = \frac{15}{x}$$

$$4x = 7.5$$

$x = 1.88$ L of Gas.

3.
1:1



Q.1

$\frac{4}{0.5} = \frac{15}{x}$

$4x = 7.5$

$x = 1.88$ L of Gas.

3. Let x = # of minutes (time)

$\frac{\text{distance}}{\text{time}}$

$\frac{2500}{8} = \frac{5800}{x}$

$2500x = 46400$

$x = 18.56$ minutes

$\frac{2500}{512} = \frac{5800}{x}$

1187.84 sec.

19 min 47 sec.

19.79

#4. **Batch Total**

# of water = 8
# of concentrate = 5

Total = 13

Total Ratio

Let x = water

$$\frac{\text{water}}{\text{total}}$$

$$\frac{8}{13} = \frac{x}{10}$$

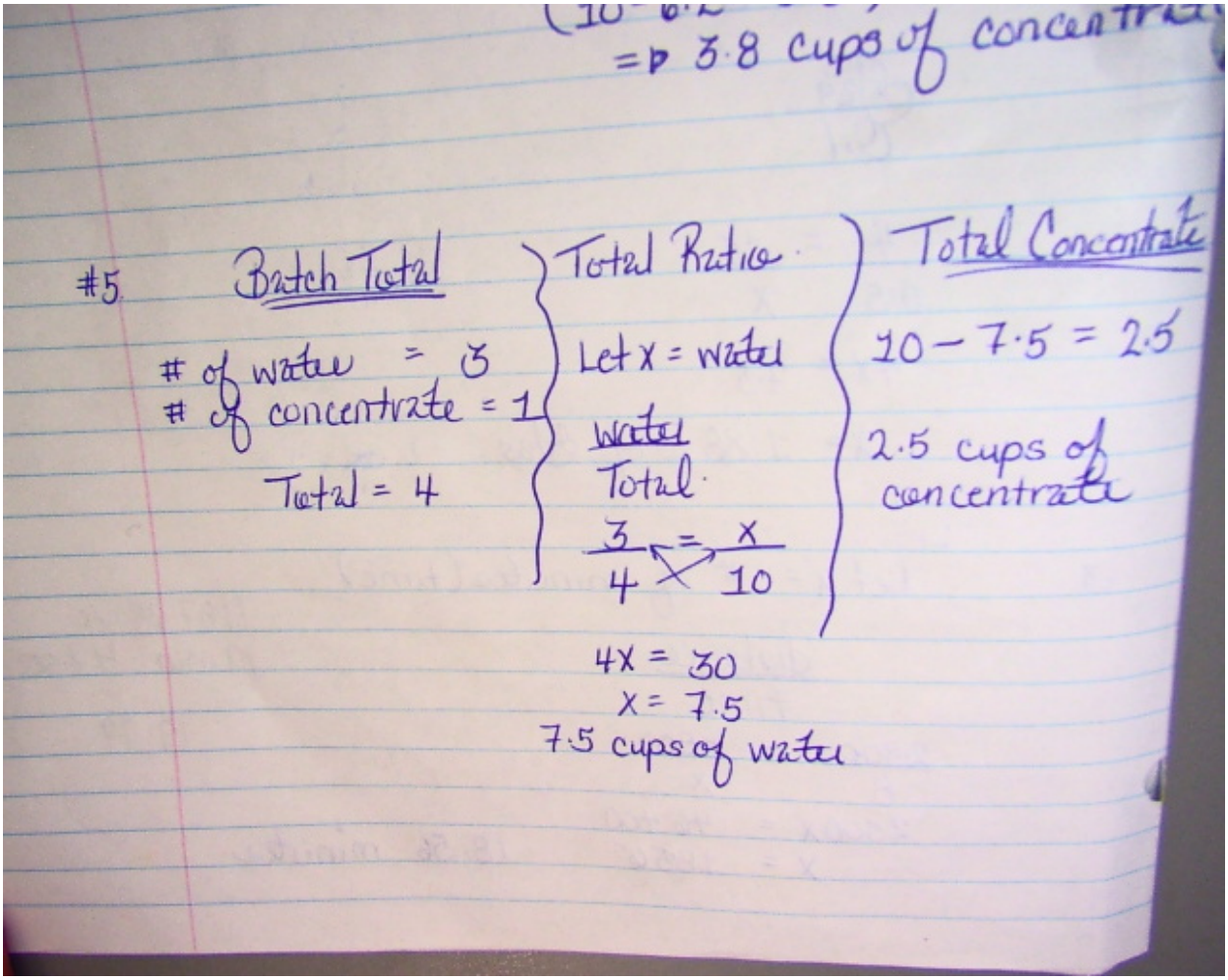
$13x = 80$

$x = 6.2$ cup.

$\Rightarrow$ 6.2 cups of water

$(10 - 6.2 = 3.8.)$

$\Rightarrow$ 3.8 cups of concentrate


=> 3.8 cups of
#5
Batch Total
# of water = 3
# of concentrate = 1
Total = 4
Total Ratio
Let x = water
Water / Total
3/4 = x/10
4x = 30
x = 7.5
7.5 cups of water
Total Concentrate
10 − 7.5 = 2.5
2.5 cups of concentrate

#6. (a) Let x = Oil.

Gas / Oil.

$\frac{25}{3} = \frac{5}{x}$

$25x = 15$.

$x = 0.6$ L of Oil

(b) **Batch Total**

Liters of Gas = 25 L
Liters of Oil = 3 L
Total = 28L

Total Ratio

Let x = Gas

Gas / Total.

$\frac{25}{28} = \frac{x}{3}$

$28x = 75$.

$x = 2.7$ L

* 2.7 L of Gas.

Total Oil

3 − 2.7 = 0.3.

* 0.3L of Oil

$\frac{28}{} \quad \frac{3}{}$

$28x = 75.$

$x = 2.7\ L$

$*$ 2.7 L of H_2S.

#7. Let x = centimeters.

$\frac{cm}{m}$.

$\frac{7}{70} = \frac{x}{25}$

$70x = 175.$

$x = 2.5\ cm.$

#9. Let Grant = X

Grant / Greg

$\frac{6}{7} = \frac{X}{115}$

$\frac{7X}{7} = \frac{690}{7}$

$X = 98.6$ kg.

#10. height / length

$\frac{1}{12} = 0.08\overline{3}$

$\frac{2}{20} = \frac{1}{10}$

$\frac{1}{10} = 0.1$ This ramp is unsafe.

#11. a) 8:4 or 2:1
b) 4:1
c) 4:17

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