Unit Price

CUT COSTS

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 :

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

3

Remember !!

$$\frac{Price}{Units}$$

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.**

$$\frac{\text{Price}}{\text{Unit}_S}$$

$$\frac{\$6.25}{12} = \boxed{\$0.52/\text{pen}}$$

Example 2:

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

✳ | Pint Basket |

$$\frac{\text{Price}}{\text{Unit} \text{s}}$$

$$\frac{\$1.50}{0.5506 \text{ L}}$$

$$= \$2.72/L$$

✳ | 4-litre Pail |

$$\frac{\text{Price}}{\text{Units}}$$

$$\frac{\$9.00}{4 \text{ L}}$$

$$= \$2.25/L$$

The 4-Litre pail is the better buy.

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

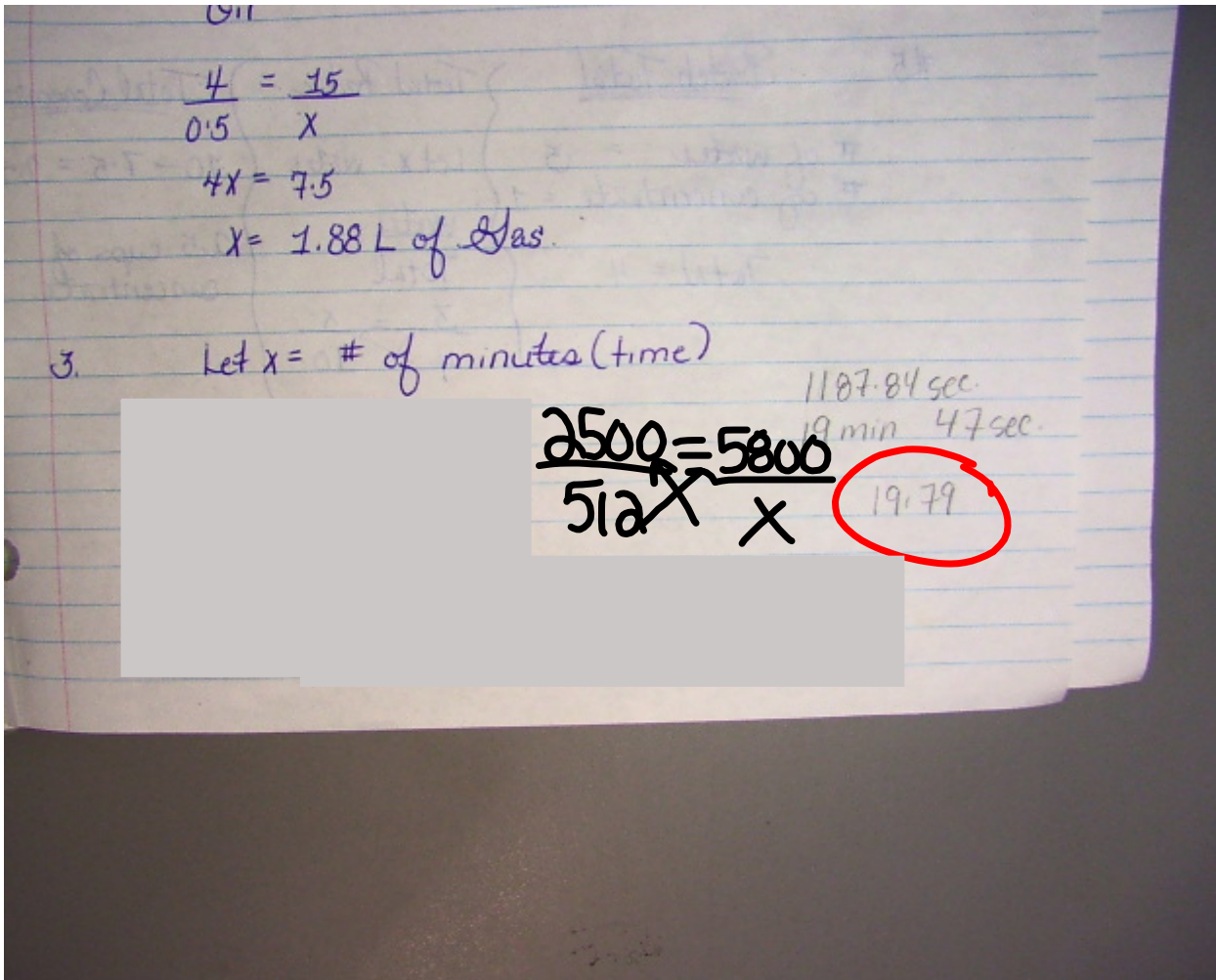 $$\frac{105}{1} = \frac{3200}{x}$$

   $105x = 3200$
   $x = 30.5$ words

2.   Let x = Oil

   $\dfrac{Gas}{Oil}$

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

   $4x = 7.5$
   $x = 1.88$ L of Gas

3.
1.1

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

$$4X = 7.5$$

$$X = 1.88 \text{ L of Gas}$$

3.   Let $x = $ # of minutes (time)

1187.84 sec.

19 min 47 sec.

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

19.79

#4.   <u>Batch Total</u>   <u>Total Ratio</u>

    # of water   = 8   Let x = water
    # of concentrate = 5

        Total = 13 $\dfrac{water}{total}$

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

$$13x = 80$$

$$x = 6.2 \text{ cup}$$

=▸ 6.2 cups of water

(10 - 6.2 = 3.8)

=▸ 3.8 cups of concentrate

$(10 - 0.2$

$= ▷ 3.8$ cups of concentra

#5   Batch Total   Total Ratio   Total Concentrate

# of water   = 3   Let x = water $10 - 7.5 = 2.5$
# of concentrate = 1

Total = 4   water   2.5 cups of
                            Total   concentrate

                            $\frac{3}{4} = \frac{x}{10}$

                    $4x = 30$
                    $x = 7.5$
                7.5 cups of water

#6.   (a)   Let x = Oil.

$\dfrac{Gas}{Oil}$

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

$25x = 15$

$x = 0.6$ L of Oil.

(b)   **Batch Total**

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

Total = 28L

Total Ratio

Let x = Gas

$\dfrac{Gas}{Total}$

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

$28x = 75$

$x = 2.7$ L

* 2.7 L of Gas.

Total Oil

$3 - 2.7 = 0.3$

* 0.3L of Oil

28

$28X = 75.$

$X = 2.7 L$

* $2.7 L$ of Gas.

#7.   Let $X =$ centimeters.

$$\frac{cm}{m.}$$

$$\frac{7}{10} = \frac{x}{25}$$

$70X = 175.$

$X = 2.5 \, cm.$

#9.   Let Grant = X

Grant
Greg
C

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

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

$$X = 98.6 \ Kg.$$

#10.   height
length
C

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

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

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

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

Page 27