

Name: Key

1. Jo says her pay is proportional to the number of hours she works. Explain what this means.

If she works twice as many hours then her pay will be twice as much.

2. Someone drives 110 kilometers an hour for 5 hours, how far have they traveled?

$$\frac{110 \text{ km}}{1 \text{ hr}} = \frac{x \text{ km}}{5 \text{ hr}}$$
$$110 \times 5 \div 1 = \textcircled{550 \text{ km}}$$

3. The world hot dog eating record is held by Joey "Jaws" Chestnut, he ate 69 hot dogs in 10 minutes.

- a) At this rate how many minutes will it take him to eat 100 hot dogs?

$$\frac{69 \text{ hot dogs}}{10 \text{ min}} = \frac{100 \text{ hot dogs}}{x \text{ min}}$$
$$10 \times 100 \div 69 = \textcircled{14.49 \text{ min}}$$

- b) Do you think this is really how long it would take him to eat 100 hot dogs? Why or why not?

No, he would slow down

4. Paula is running a marathon, after $1\frac{1}{2}$ hours she has gone 16 km of the 40.2 km total distance. What will be her finishing time in hours if she runs the same speed the whole race?

$$\frac{1.5 \text{ hr}}{16 \text{ km}} = \frac{x \text{ hr}}{40.2 \text{ km}}$$

$$1.5 \times 40.2 \div 16 = 3.77 \text{ hrs}$$

5. You have decided to buy a new car and must choose between a regular model and a hybrid model. The hybrid model uses less fuel since it uses an electric motor to power the car when it is possible.

Model	Purchase Price	Average fuel economy
Regular	\$25,310.00	7.7L per 100km
Hybrid	\$27,980.00	5.7L per 100km

Gas costs \$1.49 per liter, how many kilometers will you have to drive the Hybrid until the savings on fuel equals the difference in purchase price?

$$\text{Difference in price} = 27980 - 25310 = 2670$$

How many liters of gas is \$2670?

$$\frac{\$1.49}{1 \text{ L}} = \frac{\$2670}{x \text{ L}} \quad 1 \times 2670 \div 1.49 = 1791.95 \text{ L}$$

Every 100km Hybrid uses 2L less gas

$$\frac{2 \text{ L}}{100 \text{ km}} = \frac{1791.95 \text{ L}}{x \text{ km}} \quad 100 \times 1791.95 \div 2 = 89,597.5 \text{ km}$$

Final Answer