

# METRIC - IMPERIAL CONVERSIONS PPR2

(1) An airline allows a maximum weight limit of 20 kg on each passenger's luggage.  
 (a) You will be assessed on the quality of your written communication in this part of the question.

A passenger has luggage weighing 18 kg. He wishes to add an item weighing 1200 g to his luggage. Find out how much under or over the airline's weight limit this will make his luggage.

$1200g = 1.2kg$   
 So luggage now weighs  $18 + 1.2 = 19.2kg$   
 which is 0.8kg under the limit.

(b) Anton's luggage weighs 50 lb. (1 kg is approximately 2.2 lb.) Showing all your calculations, decide whether his luggage is under or over the airline's weight limit.

$1kg \rightarrow \boxed{\times 2.2} \rightarrow 1lb \text{ (pounds)}$   
 $20kg \times 2.2 = 44lb$  is the limit  
 So Anton is over the limit.

The maximum speed allowed for vehicles on our roads is 70 m.p.h. Calculate how much this is approximately in kilometres per hour? You must show your working.

$5 \text{ mps} \approx 8 \text{ km}$   
 $\times 14$   
 $70 \text{ mps} \approx 112 \text{ km/h}$

(3) (a) A baby weighs 3.8 kilograms. Calculate the approximate weight of the baby in pounds.

$kg \rightarrow \boxed{\times 2.2} \rightarrow \text{pounds}$   
 $3.8 \times 2.2 = 8.4 \text{ pounds}$

(b) 1.75 pints is approximately equal to 1 litre. A container holds 56 pints of paraffin. Calculate the approximate volume of the paraffin in litres.

$\text{litre} \rightarrow \boxed{\times 1.75} \rightarrow \text{pints}$   
 $\text{backwards } 56 \div 1.75 = 32 \text{ litres}$

(4) (a) Darren claims that 6 pounds of potatoes is heavier than 3 kilograms of sugar. Is he correct? You must give a reason for your answer.

$kg \rightarrow \boxed{\times 2.2} \rightarrow \text{pounds}$   
 $So 3 \times 2.2 = 6.6 \text{ pounds of sugar}$  he's wrong

(b) Mary pours three pints of milk into a jug which has a volume of 2 litres. Will the milk overflow? You must give a reason for your answer.

$\text{litre} \rightarrow \boxed{\times 1.75} \rightarrow \text{pints}$   
 $So \text{ jug holds } 2 \times 1.75 = 3.5 \text{ pints}$  so it won't overflow.

5) A water tank, in the shape of a cuboid, contains  $56000 \text{ cm}^3$  of water. The base of the tank measures  $62 \text{ cm}$  by  $35 \text{ cm}$ .

(a) Calculate the depth, in  $\text{cm}$ , of the water in the tank.

$$62 \times 35 \times d = 56000$$
$$2170 \times d = 56000$$
$$d = 56000 \div 2170 = 25.8 \text{ cm}$$

[2]

(b) Given that 1 gallon = 4.54 litres, calculate the number of gallons of water in the tank.

$$7000 \text{ cm}^3 = 1 \text{ litre}$$

$$56000 \text{ cm}^3 = 56 \text{ litres}$$

$$\text{gall} \rightarrow \boxed{7 \times 4.54} \rightarrow \text{litres}$$

$$\text{backwards } 56 \div 4.54 = 12.3 \text{ gallons.}$$

[2]

6)

Mixed Berry Yogurt Shake

Serves 8 people

Ingredients:

- 4 cups semi-skimmed milk
- 4 cups low fat natural yogurt
- 16 ounces mixed summer fruits
- 4 tablespoons of honey

The recipe for Mixed Berry Yogurt Shake appears in an old cookery book. Inside the cover of the book the reader is told that 1 cup = 250 ml, 4 ounces is approximately 115 g and 1 tablespoon is 15 ml.

(a) Complete the recipe below for serving 8 people using ml and g.

Mixed Berry Yogurt Shake

Serves 8 people

Ingredients:

- $4 \times 270 = 1080$  ml semi-skimmed milk
- $1000$  ml low fat natural yogurt
- $4 \times 115 = 460$  g mixed summer fruits
- $4 \times 15 = 60$  ml of honey

[4]

(b) Jamie has large quantities of natural yogurt, mixed summer fruits and honey but only has 5.5 litres of semi-skimmed milk. Find the largest number of people for whom Jamie can make Mixed Berry Yogurt Shakes.

$$5.5 \text{ litres} = 5500 \text{ ml}$$

$$8 \text{ people need } 1000 \text{ ml of milk}$$

$$\text{So can make } 5.5 \times 8 = 44 \text{ people.}$$

[3]