

## ARITHMETIC (Q 1, PAPER 1)

### LESSON NO. 1: SIMPLE ARITHMETIC

**2005**

1 (a) Express 35 cm as a fraction of 1 m. Give your answer in its simplest form.

**SOLUTION**

Express each quantity in the same units, say cm.

$$\therefore \frac{35 \text{ cm}}{100 \text{ cm}} = \frac{7}{20}$$

1 kilometre (km) = 1000 m  
100 centimetres (cm) = 1 m  
1000 millimetres (mm) = 1 m

**2004**

1 (a) There are 240 eggs in a box.  
2.5% of the eggs are broken.  
Find the number of eggs that are broken.

**SOLUTION**

It is very useful when doing percentage problems to turn percentages into decimals. All you do is move the decimal point two places to the left.

$$2.5\% \text{ of } 240 = 0.025 \times 240 = 6 \text{ eggs [OF means multiply.]}$$

**2001**

1 (a) A cookery book gives the following instruction for calculating the amount of time for which a turkey should be cooked:

“Allow 15 minutes per 450 grammes plus an extra 15 minutes.”

For how many hours and minutes should a turkey weighing 9 kilogrammes be cooked?

**SOLUTION**

1000 grammes (g) = 1 kilogram (kg)

Change all units of mass to grammes.

Weight of turkey = 9 kg = 9,000 g

Work out the number of 450 g in 9,000 g by dividing.

$$\text{Number of minutes} = \frac{9000}{450} \times 15 + 15 = 315 \text{ minutes}$$

60 seconds = 1 minute  
60 minutes = 1 hour

315 minutes = 5 hours 15 minutes

**2000**

- 1 (a) Express 400 grammes as a fraction of 1 kilogramme. Give your answer in its simplest form.

**SOLUTION**

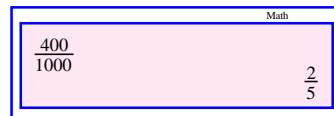
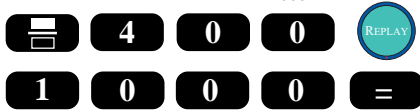
Change to the units units, say grammes (g).

$$1000 \text{ grammes (g)} = 1 \text{ kilogram (kg)}$$

$$1 \text{ kg} = 1000 \text{ g}$$

$$\text{Fraction: } \frac{400}{1000} = \frac{2}{5} \text{ [You can use the calculator.]}$$

**CALCULATOR:** Simplify  $\frac{400}{1000}$ .



**1997**

- 1 (a) A machine broke down at 0935 hours. It was repaired at 1210 hours. For how many hours and minutes was the machine out of order?

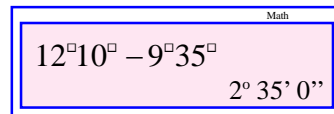
**SOLUTION**

$$\begin{aligned} 60 \text{ seconds} &= 1 \text{ minute} \\ 60 \text{ minutes} &= 1 \text{ hour} \end{aligned}$$

Hours	Minutes	Hours	Minutes
12	10	11	70
9	35	9	35
		<hr/>	
		2	35

Use the calculator as shown below.

**CALCULATOR:** Subtract 9 hours 35 minutes from 12 hours 10 minutes.



**1996**

- 1 (a) Express 250 m as a fraction of 1 km.

**SOLUTION**

$$\begin{aligned} 1 \text{ kilometre (km)} &= 1000 \text{ m} \\ 100 \text{ centimetres (cm)} &= 1 \text{ m} \\ 1000 \text{ millimetres (mm)} &= 1 \text{ m} \end{aligned}$$

Change each quantity to the same units, say metres.

$$1 \text{ km} = 1000 \text{ m}$$

$$\frac{250 \text{ m}}{1000 \text{ m}} = \frac{1}{4}$$