

Estimating Questions

Q1.

Work out an estimate for $\frac{31 \times 9.87}{0.509}$

$$\frac{30 \times 10}{0.5}$$

$$= \frac{300}{0.5}$$

$$= \frac{3000}{5}$$

$$= 600$$

.....
(Total for Question is 3 marks)

Q2.

There are 892 litres of oil in Mr Aston's oil tank.
He uses 18.7 litres of oil each day.

Estimate the number of days it will take him to use all the oil in the tank.

$$\frac{900}{20} = \frac{90}{2} = 45$$

45 days

.....

(Total for question = 2 marks)

Q3.

Work out an estimate for the value of $\frac{89.3 \times 0.51}{4.8}$

$$\begin{aligned} & \frac{90 \times 0.5}{5} \\ &= \frac{45}{5} \\ &= 9 \end{aligned}$$

(Total for Question is 2 marks)

Q4.

Sanders has a water tank for storing rainwater.

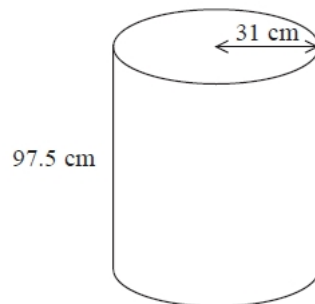


Diagram NOT
accurately drawn

The tank is in the shape of a cylinder.
The radius of the cylinder is 31 cm.
The height of the cylinder is 97.5 cm.

The tank is full of water.

Work out an estimate for the volume of water in the tank.
Give your answer in litres.
You must show your working.

Use $1000 \text{ cm}^3 = 1 \text{ litre}$.

$$\begin{aligned} V &= \pi r^2 h \\ V &\approx 3 \times 30^2 \times 100 \\ &= 3 \times 900 \times 100 \text{ cm}^3 \\ &= 3 \times 90 \times 1000 \text{ cm}^3 \\ &= 270 \text{ litres} \end{aligned}$$

270

..... litres

(Total for question = 3 marks)

Q5.

Margaret has some goats.

The goats produce an average total of 21.7 litres of milk per day for 280 days.

Margaret sells the milk in $\frac{1}{2}$ litre bottles.

Work out an estimate for the total number of bottles that Margaret will be able to fill with the milk.

You must show clearly how you got your estimate.

$$20 \times 300 = 600 \text{ litres}$$
$$= 1200 \text{ bottles of } \frac{1}{2} \text{ litre}$$

.....

(Total for Question is 3 marks)

Q6.

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Competition

a prize every 2014 seconds

In a competition, a prize is won every 2014 seconds.

Work out an estimate for the number of prizes won in 24 hours.

You must show your working.

$$24 \times 60 \times 60 \text{ seconds}$$

$$\begin{array}{r} 24 \\ \times 26 \\ \hline 144 \\ \times 226 \\ \hline 864 \end{array}$$

$$86400 \text{ seconds}$$

$$\frac{86400}{2014} \approx \frac{86000}{2000} = 43 \text{ prizes}$$

(Total for Question is 4 marks)