

9.
(a) and
(b)

Answer

(a) Each piece length
 $= 80 \text{ cm} \div 16$
 $= 80 \text{ cm} \div 4 \div 4$ (as $4 \times 4 = 16$)
 $= 20 \text{ cm} \div 4$
 $= \mathbf{5 \text{ cm}}$ 1

(b) $80 \text{ cm} = 80 \times 10 = 800 \text{ mm}$ (as $1 \text{ cm} = 10 \text{ mm}$)

No of pieces
 $= 800 \div 25 = 8 \times 4$ (as $100 \div 25 = 4$)
 $= \mathbf{32 \text{ pieces}}$ 1

Total: 2

Method

(a) The stick is 80 cm long.
Divide by 16 to find the length of each equal piece.

 $16 = 4 \times 4$, so divide by 4 and then divide by 4 again, as shown above.

Alternatively, you know that $160 \div 16 = 10$, so $80 \div 16 = 5$.

(b) For this part, you are given the length of each piece and told to find the number of pieces.

First, convert 80 cm into mm by multiplying by 10, and then divide by 25 mm.

The simplest way is to remember that $4 \times 25 = 100$. This means that $800 = 8 \times 4 \times 25$, so $800 \div 25 = 8 \times 4 = 32$.

Top Tip

When you are calculating with measurements, always make sure everything is in the same units.

In part **(b)**, you have to divide 80 cm by 25 mm, so you need to convert 80 cm to mm first.

$1 \text{ cm} = 10 \text{ mm}$, so $80 \text{ cm} = 80 \times 10 = 800 \text{ mm}$