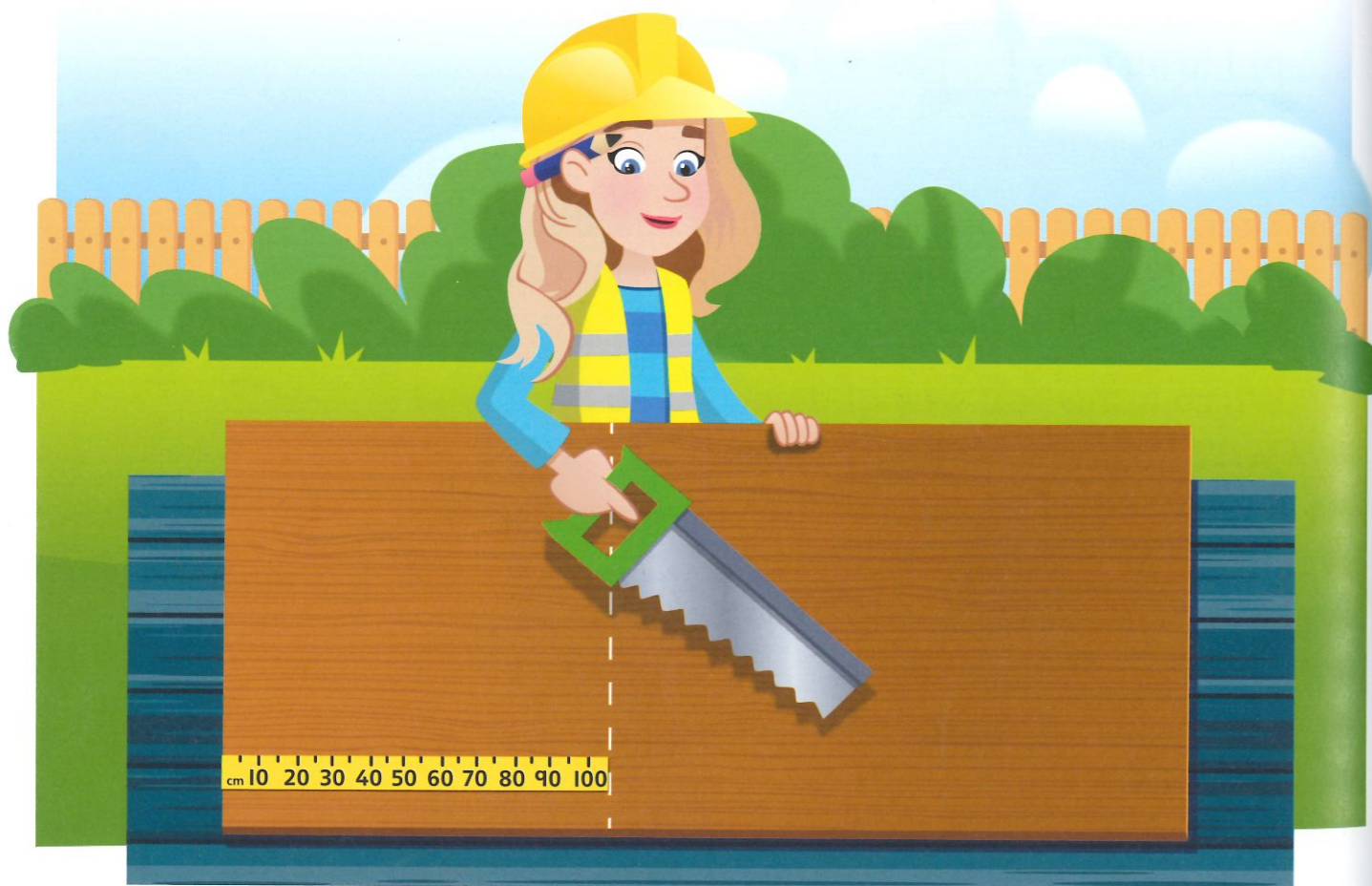# Subtracting lengths

Discover

1 Holly is making a guinea pig run. She is going to cut a piece of wood 1 m long from a board that is 2 m 50 cm long.

a) What length of board will be left after Holly has cut off the 1 m piece?

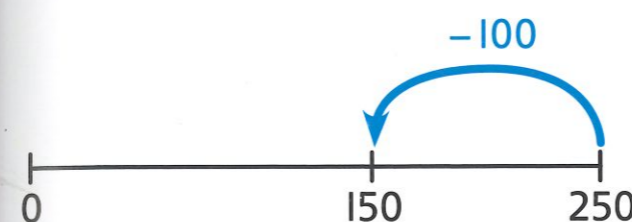**b)** Will there be enough left to cut another 1 m piece? Explain your answer.

Share

a)

The board is 2 m and 50 cm. Holly could mark the board with two parts that are each 1 m long, and one part that is 50 cm long. When Holly has cut off 1 m, she will have a 1 m 50 cm length of board left.

1 m   1 m   50 cm

I know another way to do it. 2 m 50 cm is the same as 250 cm. A 100 cm piece is being cut off, so I will do a subtraction: 250 − 100 = 150 cm.

b)

There is 150 cm left. That is enough to cut another 1 m piece.

1 m   1 m 50 cm = 150 cm

There may also be times when it is best to use column subtraction.
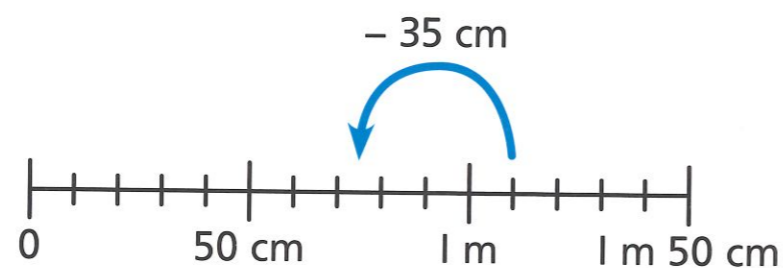
Think together

1 A plank is 3 metres long. Amal cuts off a piece that is 50 cm long.

←—50 cm—→

How much is left?

☐ cm − 50 cm = ☐ cm.

2 Emma's picture is 1 m 10 cm long. She trims a 35 cm piece off the end.

− 35 cm

```
|---|---|---|---|---|---|---|---|---|---|
0       50 cm      1 m    1 m 50 cm
```

How long is the picture now?

It is ☐ cm.

3 Lee has a piece of string that is 8 cm 5 mm long. He cuts some off so that now the string is 65 mm long. How much has he cut off?

0 mm 10 20 30 40 50 60 70 mm 80 90 100

CHALLENGE
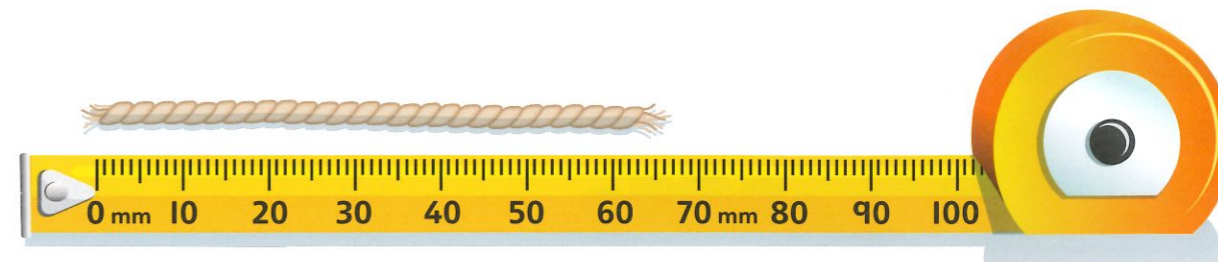
4 There are 10 metres of ribbon on a reel. Danny cuts off 1 m 50 cm and Bella cuts off 77 cm.

How much ribbon is left on the reel?

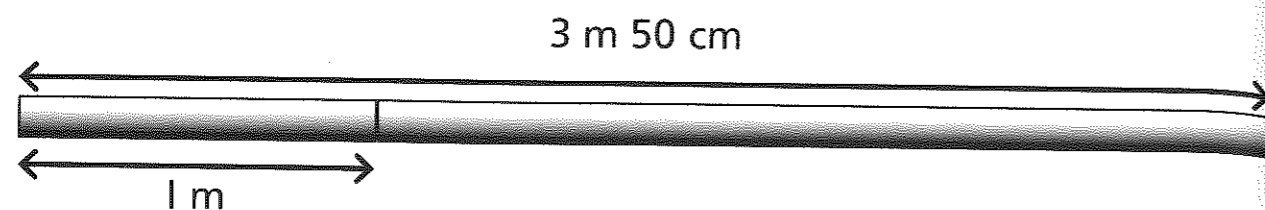Suggest different ways of finding the answer.

Ribbon 10m

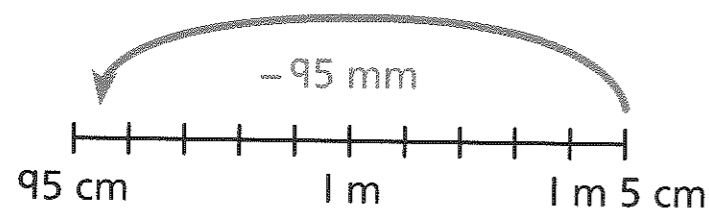You could change all of the lengths to centimetres … or there might be a better way!

142

143

Subtracting lengths

1 a) The pipe was 3 m 50 cm long. Jen has cut a 1 m piece off the end. How long is the pipe now?

3 m 50 cm

1 m

The pipe is now _____ long.

b) Emma's painting was 1 m 5 cm long. She has cut off 95 mm to make it fit a frame. How long is the painting now?

– 95 mm

95 cm   1 m   1 m 5 cm

Emma's painting is _____ long.

c) Toshi has a plank 3 m 50 cm long. He needs a piece 2 m long. How much should he cut off the plank?

Toshi should cut _____ off the plank.

d) A piece of string is 65 mm long. Aki cuts off 3 cm. How long is the string now?
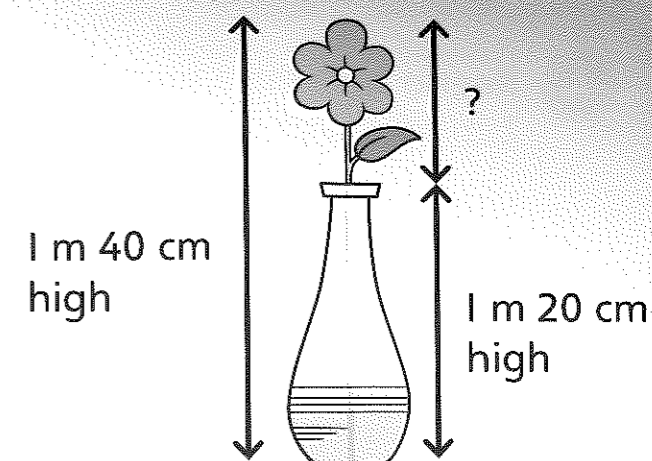
The string is now _____ long.

2 Sofia puts a flower in a vase.

The vase is 1 m 20 cm high, and the flower is 1 m 40 cm high.

How far does the flower stick out above the vase?

The flower sticks out [   ] cm.

1 m 40 cm high

1 m 20 cm high

?

3 a) 1 m 10 cm – 50 cm = [   ]

e) 85 mm – 2 cm = [   ]

b) 2 m 10 cm – 50 cm = [   ]

f) 5 cm 8 mm – 20 mm = [   ]

c) 310 cm – 1 m 50 cm = [   ]

g) 2 cm 5 mm – 8 mm = [   ]

d) 350 cm – [   ] = 2 m 10 cm

h) 120 mm – [   ] = 6 cm

4 Reena bought a new 10 m reel of ribbon, and used 2 m 50 cm of it.

She then lent the reel to her friend Aki.

When Aki gave the reel back, there was 3 m 60 cm of ribbon left.

How much ribbon did Aki use?

CHALLENGE

Ribbon 10 m

Aki used _____ .

Reflect

What method could you use to solve each of these subtractions?

3 m 30 cm – 165 cm   2 m – 1 m 30 cm