



- 1 A pencil is placed next to a ruler. One end of the pencil is at 0 cm. The other end is at the fourth small mark after the 9 cm mark. Each small mark is 1 mm.

How long is the pencil in centimetres?

(1 mark)

$$4 \text{ small marks} = 4 \text{ mm} = 0.4 \text{ cm}$$

$$9 + 0.4 = 9.4$$

$$\boxed{9.4 \text{ cm}}$$

- 2 A measuring jug has lines every 100 ml, labelled 0, 100, 200 up to 1000 ml. The water level is exactly halfway between the 300 ml line and the 400 ml line.

How much water is in the jug?

(1 mark)

Halfway between 300 and 400

$$(300 + 400) \div 2 = 350$$

$$\boxed{350 \text{ ml}}$$

- 3 On a number line, 200 is marked at the left and 300 is marked at the right. The line is split into 10 equal parts. An arrow points to the seventh mark after 200.

What number does the arrow point to?

(1 mark)

$$(300 - 200) \div 10 = 10 \text{ for each part}$$

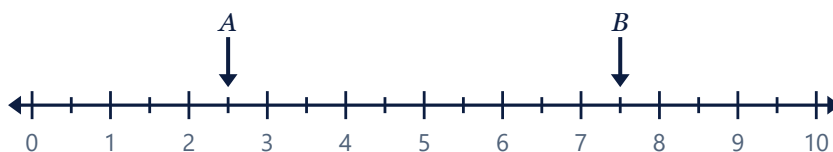
$$7 \times 10 = 70$$

$$200 + 70 = 270$$

$$\boxed{270}$$

- 4 The scale below is marked in centimetres, with a mark every half a centimetre. Two arrows, A and B , point to the scale.

Write down the value that each arrow points to.



(2 marks)

Marks are every 0.5

A is halfway between 2 and 3

$$A = 2.5$$

B is halfway between 7 and 8

$$A = 2.5, B = 7.5$$

- 5 A scale has 20 labelled at one mark and 30 labelled at the next labelled mark. There are 4 unlabelled marks, equally spaced, between 20 and 30. The pointer is at the third of these unlabelled marks, counting up from 20.

What value does the pointer show?

(1 mark)

5 equal gaps between 20 and 30

$$10 \div 5 = 2 \text{ for each gap}$$

$$22, 24, 26$$

$$26$$

- 6 Kitchen scales have a dial that shows 0 to 2 kg. Each kilogram is split into 10 equal parts. The pointer is at the third mark after 1 kg.

What mass do the scales show? Give your answer in grams.

(1 mark)

$$1 \text{ kg} \div 10 = 100 \text{ g each part}$$

$$3 \times 100 = 300 \text{ g}$$

$$1000 + 300 = 1300$$

$$1300 \text{ g}$$

- 7 Anna measures a line with a ruler. The left end of the line is at the 2.3 cm mark. The right end is at the 8.1 cm mark.

How long is the line?

(1 mark)

$$\text{Length} = \text{right end} - \text{left end}$$

$$8.1 - 2.3 = 5.8$$

5.8 cm

- 8 A line is placed against a scale marked in centimetres. The scale has a mark every 0.2 cm and the numbers are 1 cm apart.

The ends of the line are shown by dots on the scale. Work out the length of the line.



(2 marks)

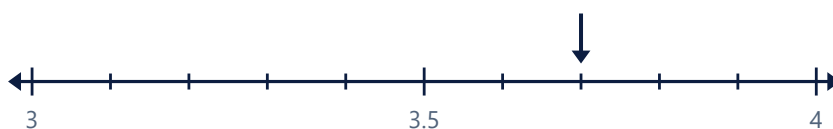
$$\text{Left end} = 2 \text{ cm}$$

$$\text{Right end} = 6.4 \text{ cm}$$

$$6.4 - 2 = 4.4$$

4.4 cm

- 9 The arrow points to a number on the scale. The scale goes up in steps of 0.1. Write down the number the arrow points to.



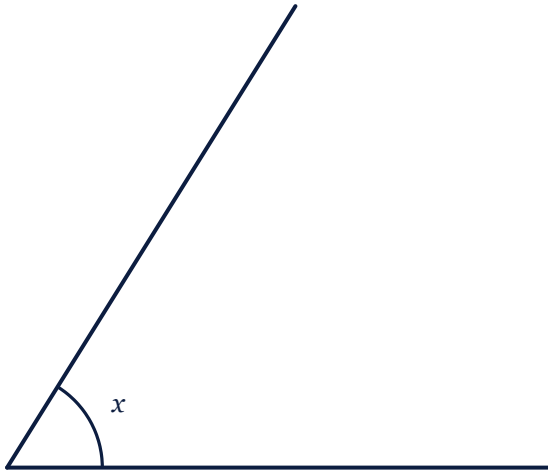
(1 mark)

$$\text{Each small mark} = 0.1$$

$$\text{Arrow is 7 marks after 3}$$

3.7

- 10 Use a protractor to measure the angle marked x .



(2 marks)

Centre of the protractor on the corner

Zero line along one arm

Read from 0 to the other arm

$$x = 58^\circ$$

- 11 A thermometer has marks every 2°C . In the morning the liquid is at the third mark above 10°C . In the afternoon it is at the second mark above 20°C .

Work out how many degrees the temperature has risen.

(2 marks)

$$\text{Morning: } 10 + 3 \times 2 = 16$$

$$\text{Afternoon: } 20 + 2 \times 2 = 24$$

$$24 - 16 = 8$$

$$8^\circ\text{C}$$

- 12 A jug has marks every 50 ml up to 500 ml. The water is level with the third mark above the 200 ml line. Sam then pours out 120 ml.

How much water is left in the jug?

(2 marks)

$$200 + 3 \times 50 = 350 \text{ ml}$$

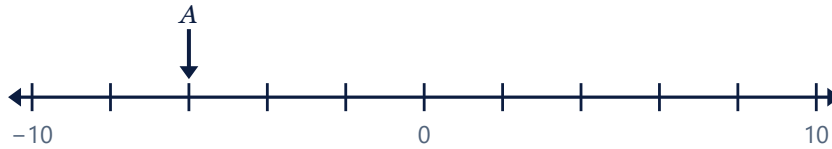
$$350 - 120 = 230$$

$$230 \text{ ml}$$

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The diagram shows a number line with an arrow A.

- Write down the number the arrow A points to.
- A second number B is 14 more than the number at A.
Work out the value of B.



(3 marks)

a) From -10 to 0 there are five equal divisions, so each division is 2. A is two divisions to the right of -10: $-10 + 4 = -6$

b) $B = -6 + 14 = 8$