Measures

- Approximating sizes of everyday objects in metric units
- Reading scales on a variety of instruments
- Converting between different metric units

Keywords

You should know

explanation 1a explanation 1b online

1 Copy the table and put a tick in one column for each unit.
The first one has been done for you.

Unit	Length	Area	Capacity	Mass
Metre	✓			
Centilitre				
Centimetre				
Square millimetre				
Gram				
Litre				
Square centimetre				
Millimetre				
Kilogram				

2 The abbreviation for centimetre is cm. Write the abbreviation for each of the following units.

a millimetre **b** centilitre **c** square metre
d square centimetre **e** kilometre **f** gram
g metre **h** kilogram **i** millilitre

3 Copy and complete.

a 10 mm = 1 ☐ **b** 100 ☐ = 1 litre **c** 1000 g = 1 ☐
d ☐ cm = 1 m **e** 1000 ☐ = 1 m **f** 1000 ☐ = 1 litre

4 What is the capacity of each container?

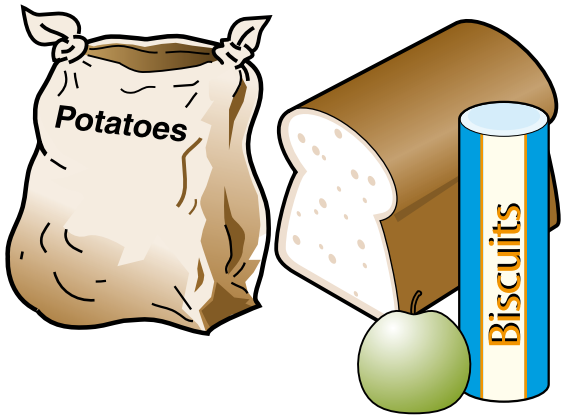
330 ml

2.5 litres

1 litre

100 ml

5 What is the mass of each item?



2.5 kg

200 g

800 g

100 g

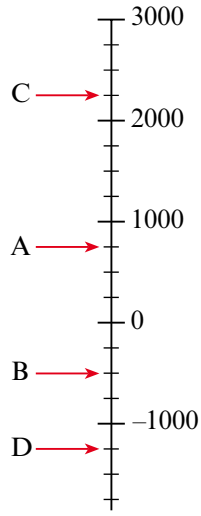
6 Carol does her shopping on the internet.
She has to be careful to order things in the right quantities.
List any of the following items and quantities that don't seem to be correct.

Butter (500 g)
Cheese (400 g)
Mushrooms (50 kg)
Orange juice (1.5 ml)
Frozen peas (1.2 kg)
Washing up liquid (500 litres)
Milk (4 litres)
Potatoes (5 g)
Broccoli (300 g)
Tomato sauce (330 litres)
Carrots (2 kg)
Chocolate (100 g bar)

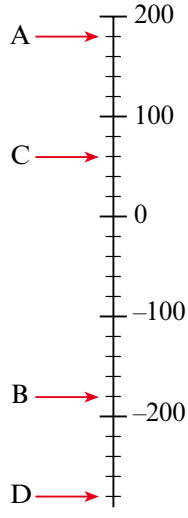
explanation 2

7 Write the value shown by each arrow.

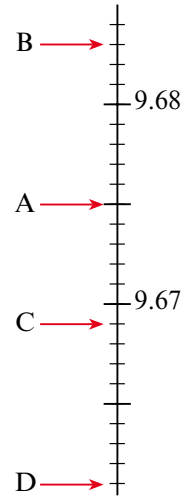
a



b



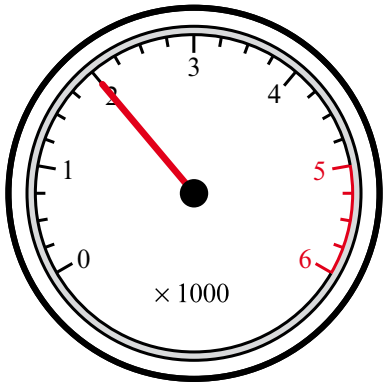
c



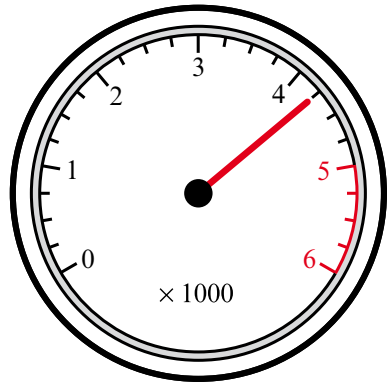
8 The engine speed of a car is measured in revolutions per minute. The value shown on these dials is multiplied by 1000 to give the engine speed.

Write down the engine speed shown on each dial.

a

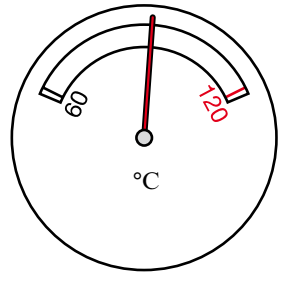


b



9 This dial shows the engine temperature of a car.

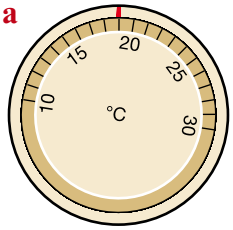
Estimate the temperature shown.



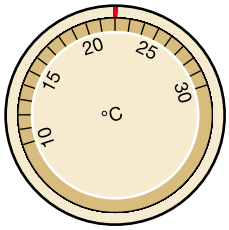
10 The temperature in a house is controlled by a thermostat.

Find the temperature set on each of these.

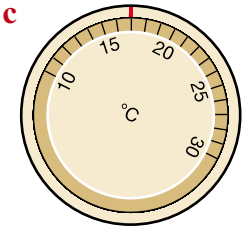
a



b

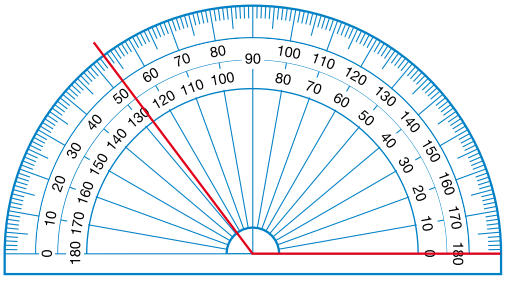


c

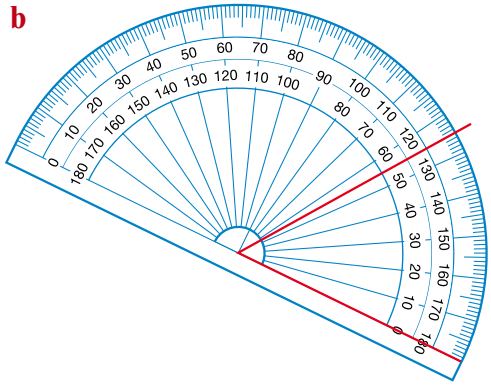


11 What is the size of the angles shown in these diagrams?

a

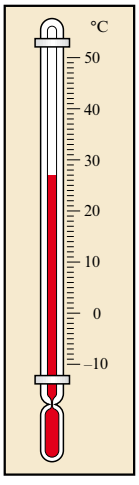


b

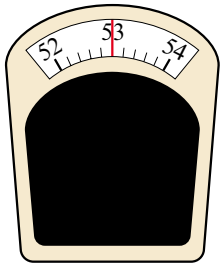


12 Read the values shown on these scales. Remember to include the units.

a



b



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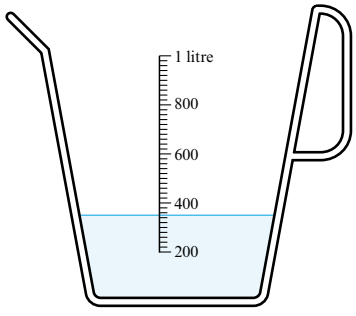
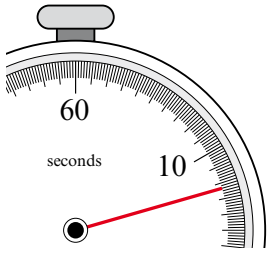
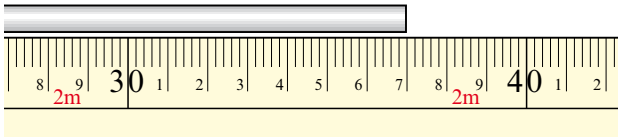


d



e



explanation 3 online

13 Copy and complete.

a 36 cm = ☐ mm
b 24.8 cm = ☐ mm
c 900 mm = ☐ cm
d 437 mm = ☐ cm
e 1.6 m = ☐ mm
f 320 cm = ☐ m

10 mm = 1 cm
100 cm = 1 m

14 Copy and complete.

a 75 cl = ☐ litres
b 2.5 litres = ☐ ml
c 125 cl = ☐ litres
d 330 ml = ☐ cl
e 3 litres = ☐ cl
f 55 cl = ☐ ml

10 ml = 1 cl
100 cl = 1 litre

15 Copy and complete.

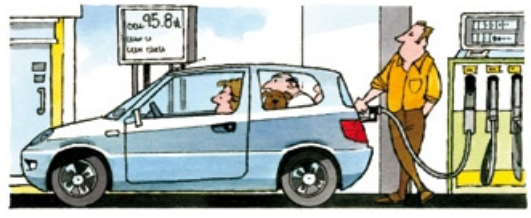
a 2000 g = ☐ kg
b 3.5 kg = ☐ g
c 625 g = ☐ kg
d 0.7 kg = ☐ g
e 0.09 kg = ☐ g
f 24 g = ☐ kg

1000 g = 1 kg

16 Petrol is now sold in litres, but years ago it was sold by the gallon. There are roughly 4.5 litres in 1 gallon.

a A typical family car will travel about 8 miles on 1 litre of fuel. How many miles is this per gallon?

b A Lamborghini will only travel about 9 miles on 1 gallon of fuel. How many miles is this per litre?



17 A standard ruler used in schools is 12 inches long. What is the length of a standard ruler in centimetres?

1 inch is about 2.5 cm.

18 Michael has a hand span of 20 cm. What is this in inches?

explanation 4a | explanation 4b | explanation 4c | online

19 How many hours are there in a week?

20 **a** How many minutes are there in a day?

b How many minutes are there in a week?

21 It has been calculated that Bill earns $250 per second. How much does Bill earn in an hour?

22 Write these times using the 24-hour clock.

a 7:21 a.m. **b** 3.20 p.m. **c** 10:24 p.m.

d 5:15 p.m. **e** 1:09 a.m. **f** 1:36 p.m.

23 Write these times using the 12-hour clock.

a 18:05 **b** 16:22 **c** 09:20

d 11:30 **e** 23:55 **f** 10:42

24 Ben can walk to work in 22 minutes. He wants to arrive at 8:10 a.m. to prepare for a meeting. What time should Ben leave for work?

25 Suzie is travelling from Stafford to Cambridge and has to change trains at Nuneaton. Her arrival time at Nuneaton is 07:48 and her departure time is 08:03. How long does Suzie have to wait at Nuneaton?

26 The new high speed Channel Tunnel rail link makes it possible to travel from London to Paris in 2 hours 15 minutes and from London to Brussels in 1 hour 51 minutes.

a A train leaves London at 14:47. What time will it arrive in Paris?

b A train arrives in Brussels from London at 16:24. What time did the train leave London?