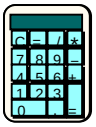
USING MATHEMATICS 3 (ACC 3)
Outcome 4

Exercise 1

You may use a calculator for this exercise



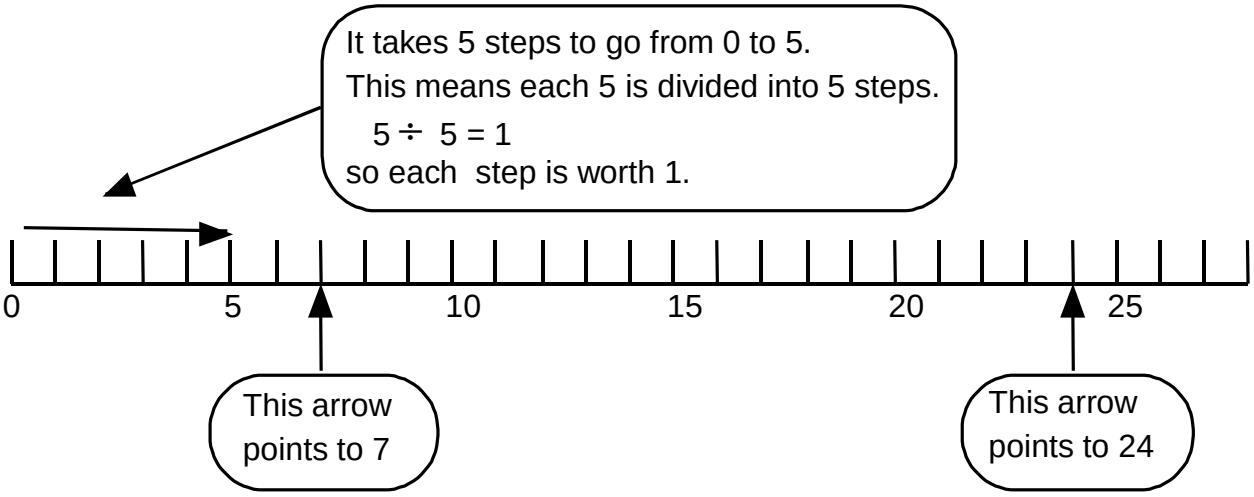
Reminders

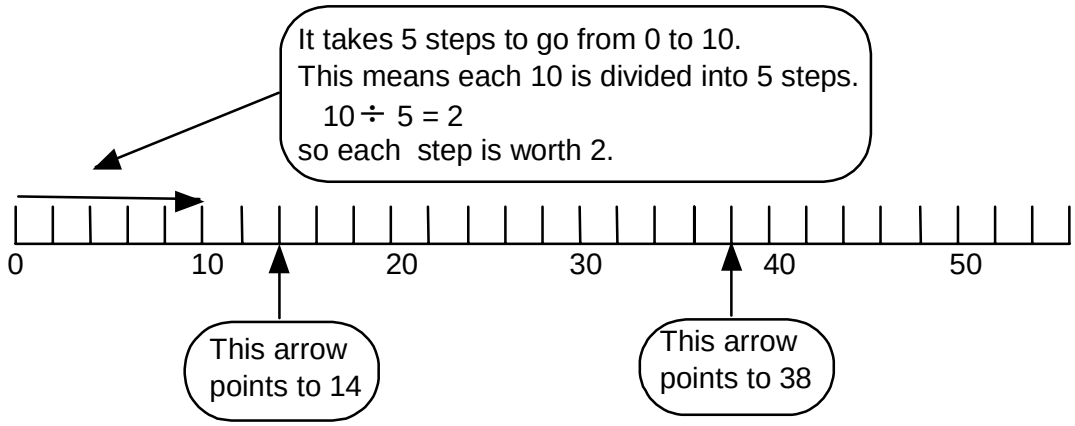
On this ruler the scale does not show all the numbers.

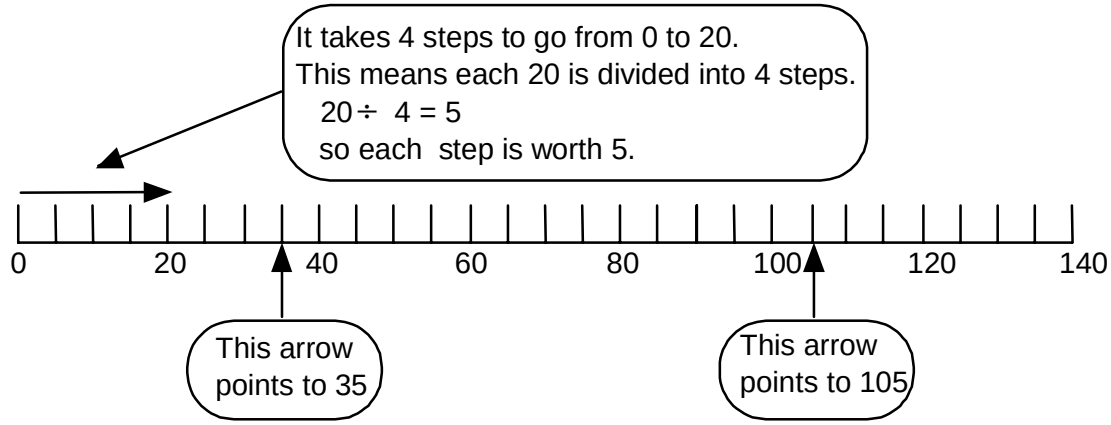
We must work out what number goes next to each mark on the ruler.

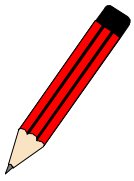
You will find this on other instruments

e.g. tape measure; oven dial on a cooker; thermometer

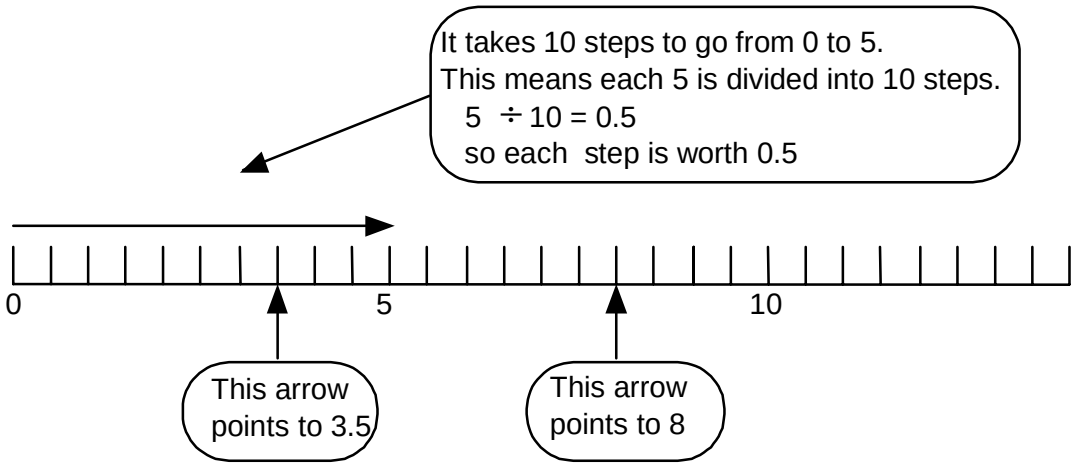


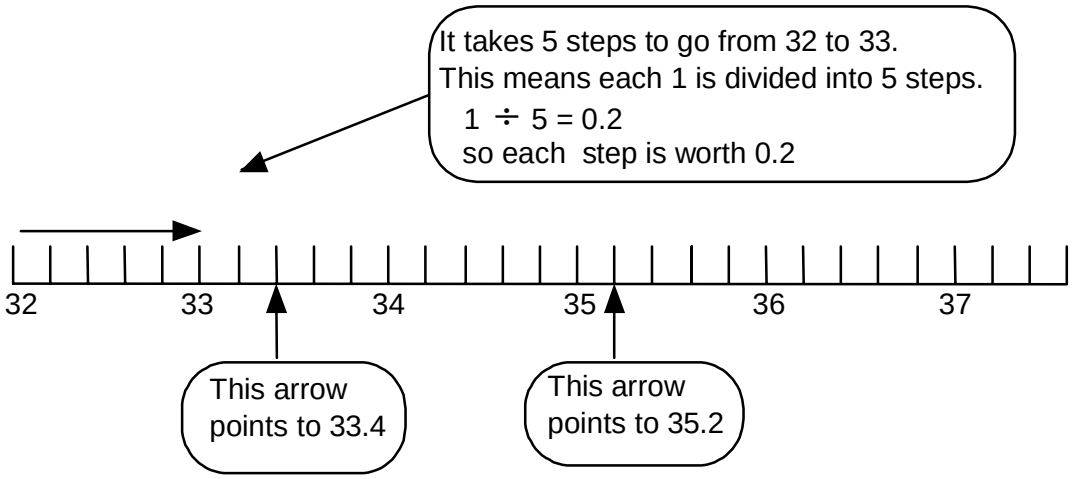






You need Scales Worksheet 1

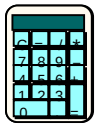




You need Scales Worksheet 2

Exercise 2

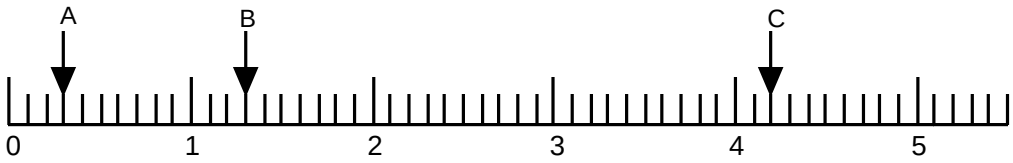
You may use a calculator for this exercise



For each of these scales find the values marked by the arrows.

Write the answers into your jotter.

1.



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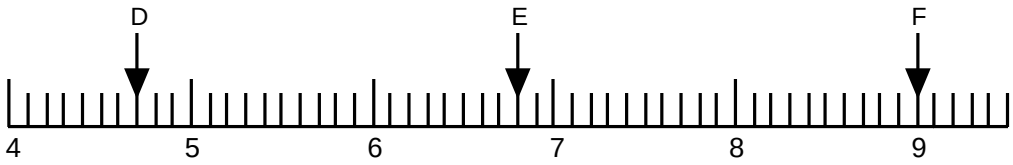

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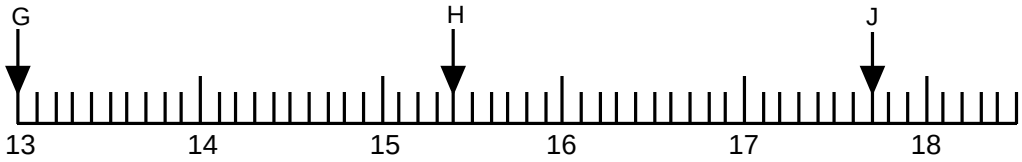

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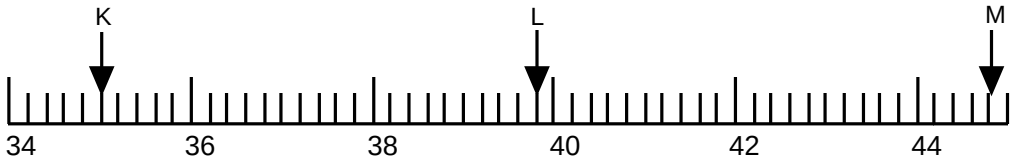

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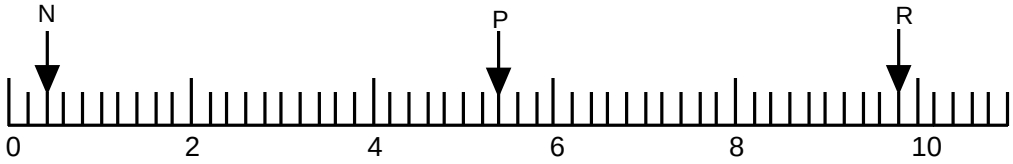


Exercise 3

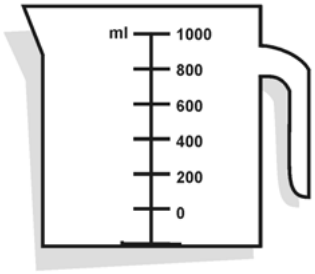
1. Write the name of each measuring instrument in your jotter.

Choose from :

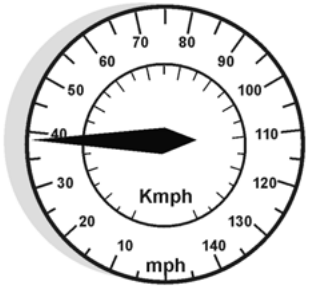
thermometer; ruler; kitchen scales; measuring jug;

speedometer; ruler; bathroom scales; clock

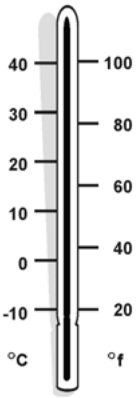
a) You will find this in Home Economics.



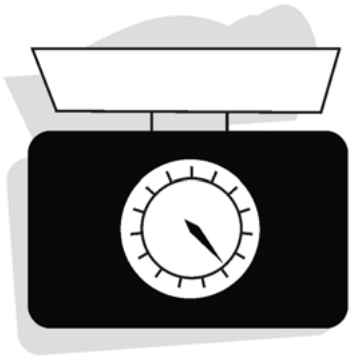
b) You will find this in a car.



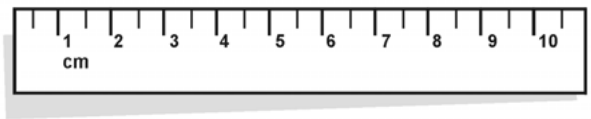
c) You will find this in Science.



d) You will find this in a kitchen.



e) You will find this in Maths.



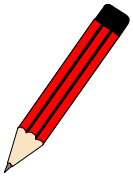
2. Beside each of your answers write a short description of what each instrument is used to measure.

Reminders

All scales have numbers which are spaced out equally.

A scale also measures in units e.g. grams, kg, ml, cm^3 etc.

The unit of measurement is usually written on the scale.



For each of the examples in Exercises 4 to 8,

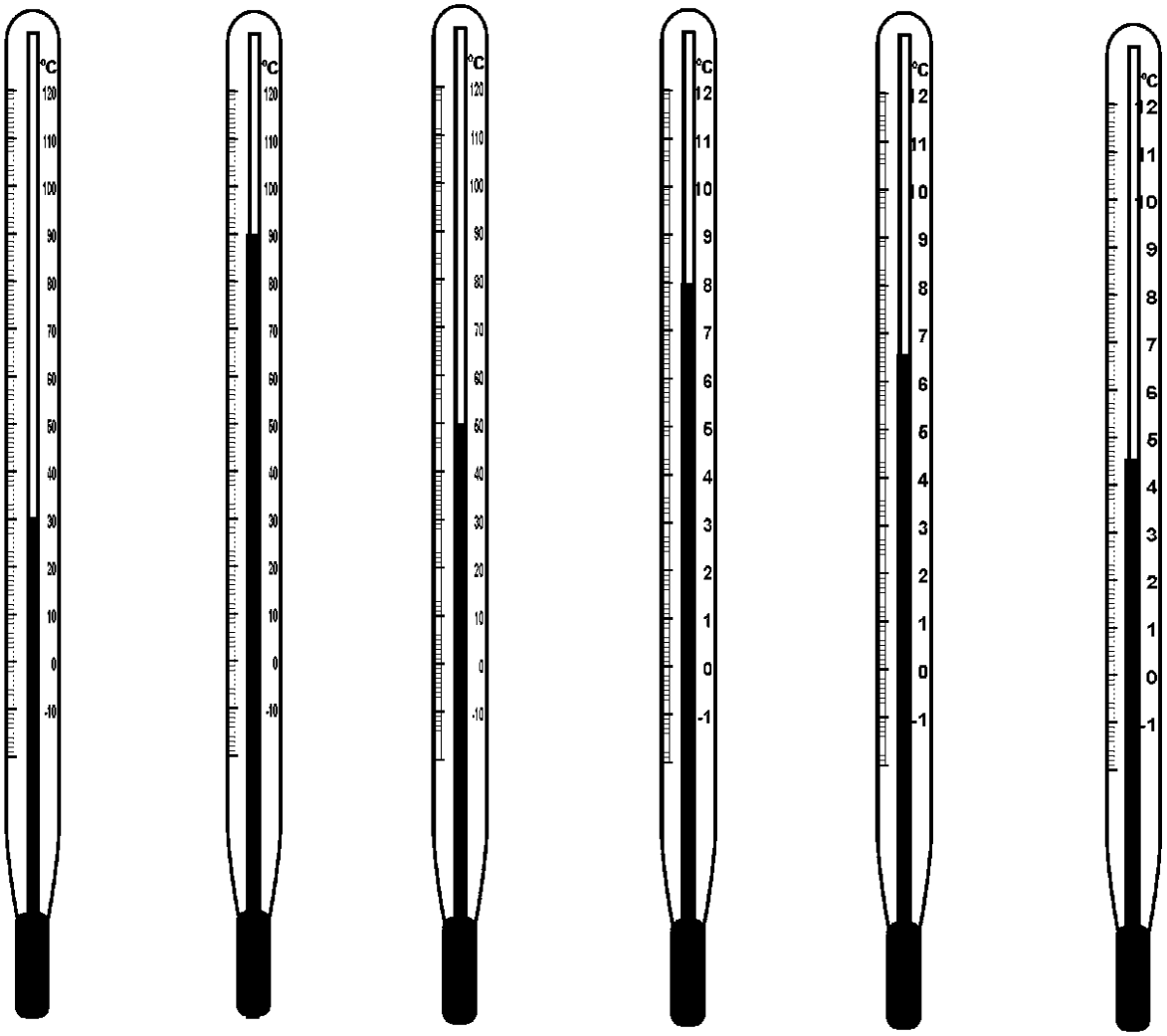
write your answers into your jotter.

Remember to include units in each of your answers.

Exercise 4

Thermometers and Temperatures (ºC)

1. 2. 3. 4. 5. 6.



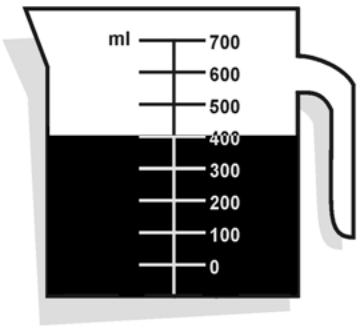
Exercise 5

Measuring jugs and millilitres (ml)

Here are some measuring jugs with different scales on them.

How much liquid is in each of the jugs?

1



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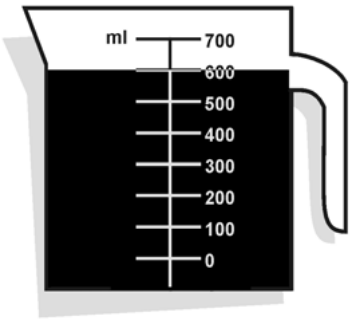

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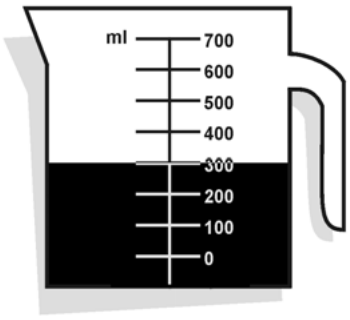

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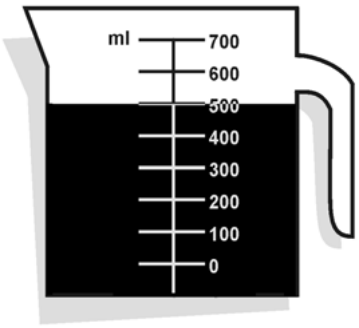

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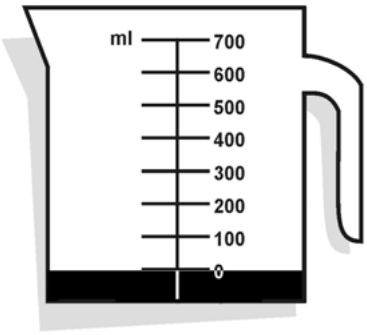

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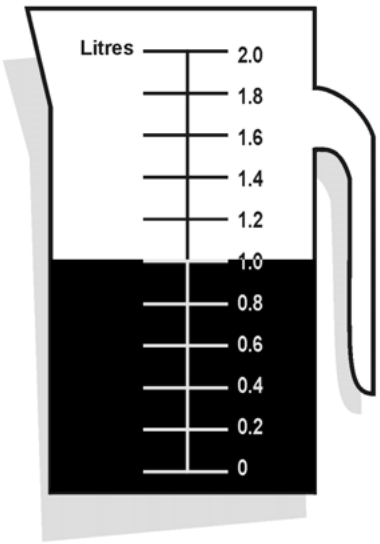

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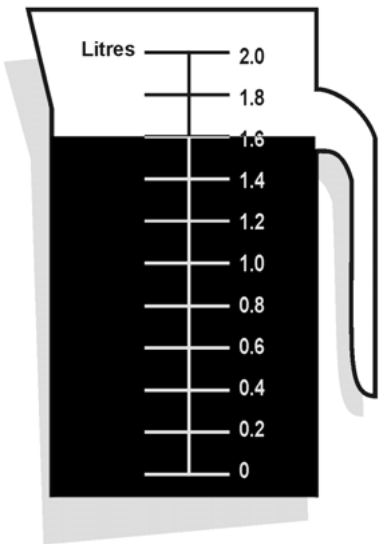

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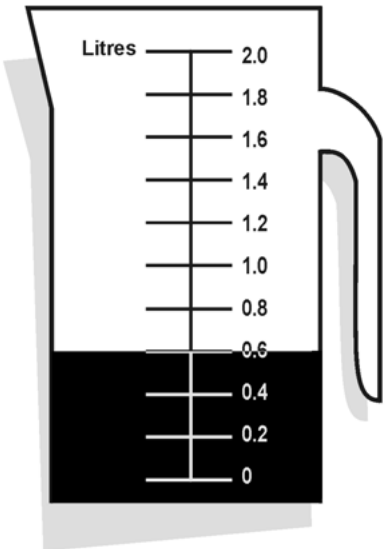


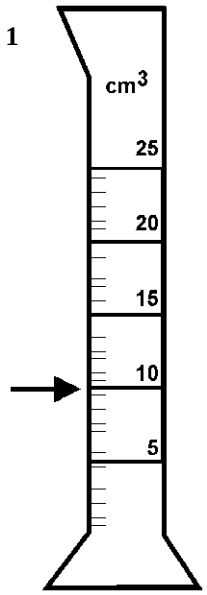
Exercise 6

Measuring cylinders and cubic centimetres (cm^3)

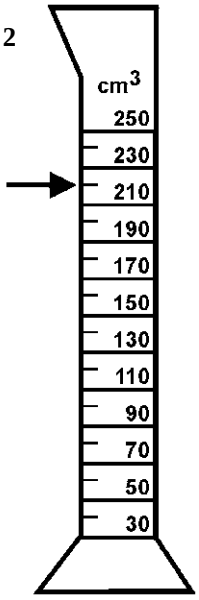
Here are some measuring cylinders with different scales on them.

How much liquid is in each of the cylinders?

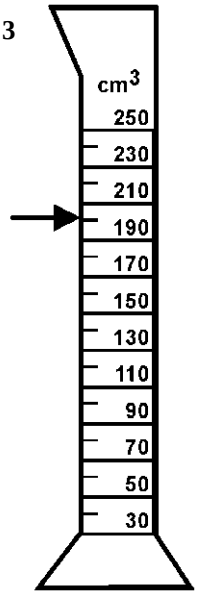
1



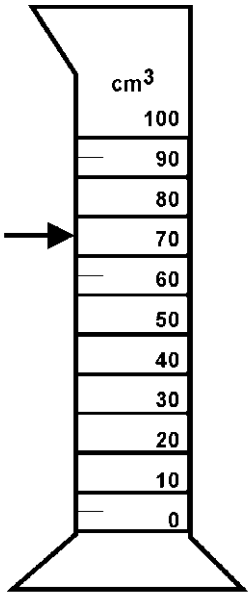
2



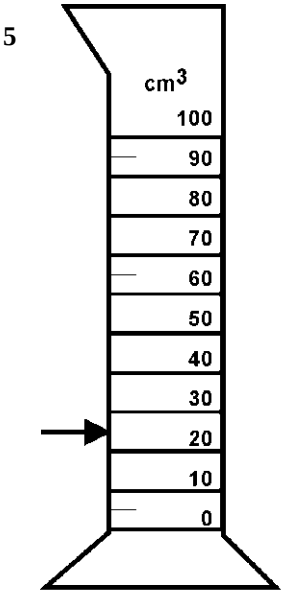
3



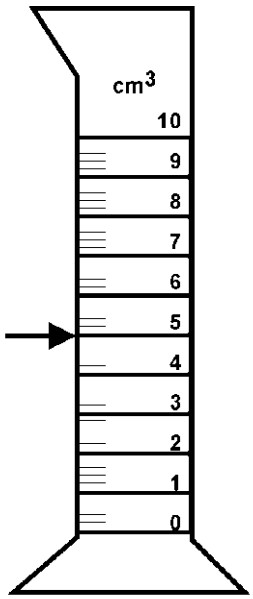
4



5



6



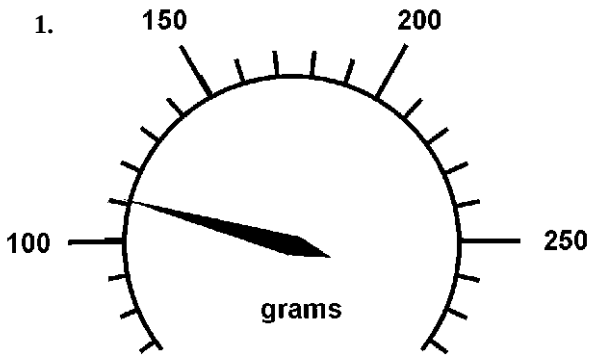
Exercise 7

Scales and weighing in grams (g) and kilograms (kg)

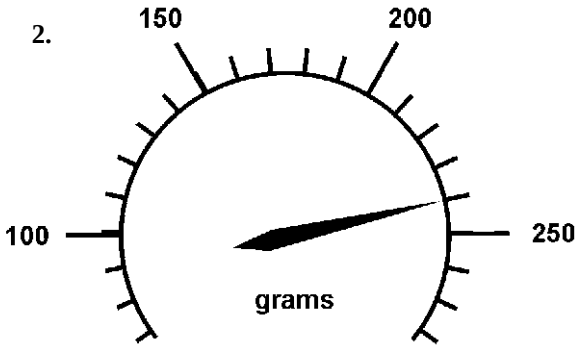
Here are some different scales.

What weight is shown on each?

1.



2.



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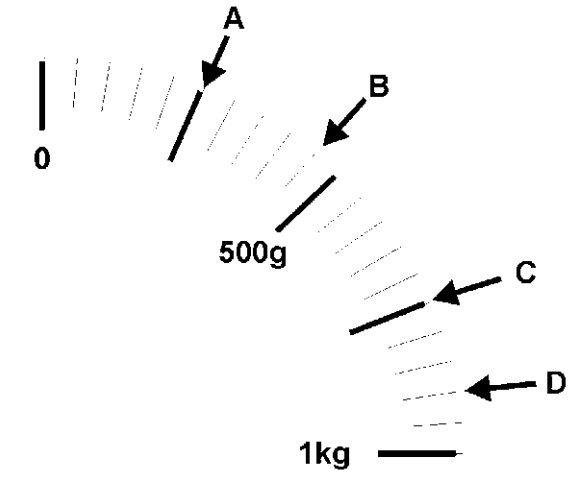

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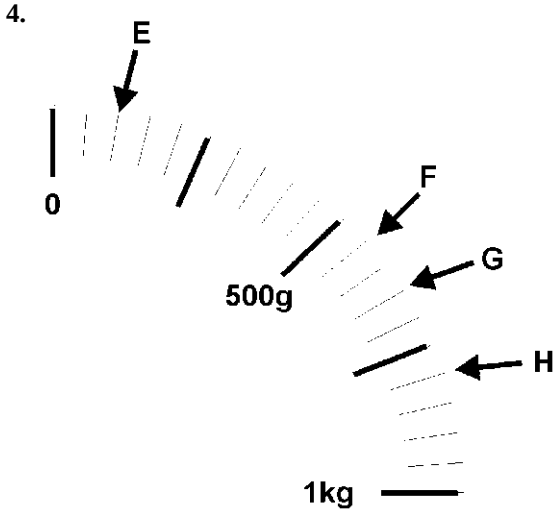

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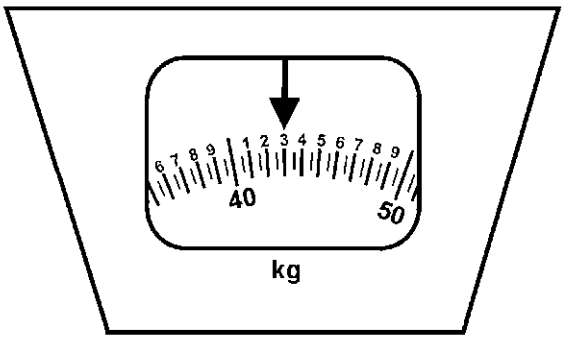

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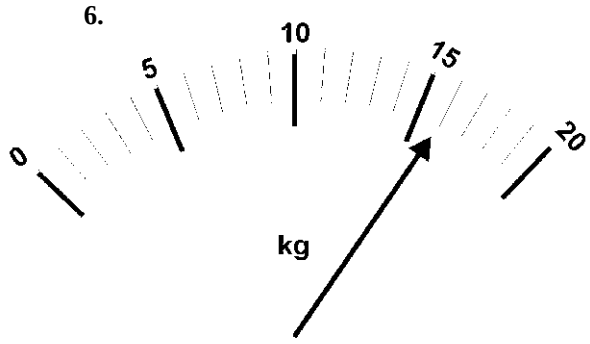


Exercise 8

Protractors and measuring angles in degrees (^{o})

Look carefully at this picture of a protractor.

You will see that there are two sets of numbers.

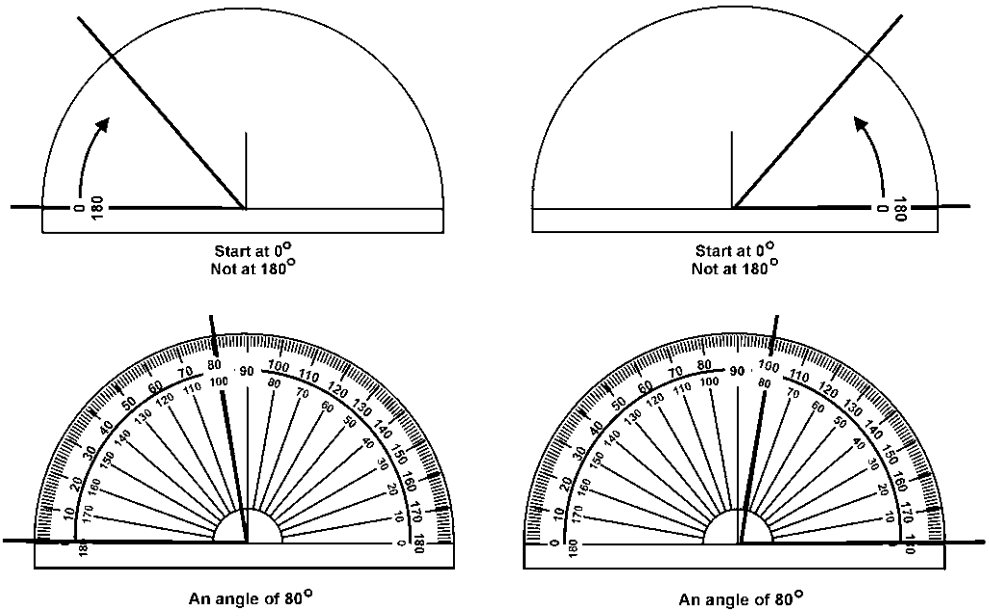
One set goes from 0° to 180°.

The other set goes from 180° to 0°.

When we measure an angle we have to decide which is the correct number to use.

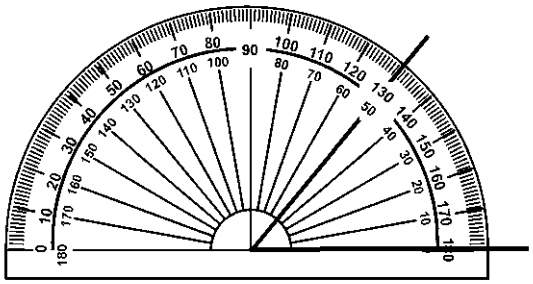
Here are two angles. You will see that the angles are at different ends of the baseline.

When we place the protractor on the angle, we will use the set of numbers that start at 0^{o}.



In your jotter, write the size of each of the angles shown below:

1.



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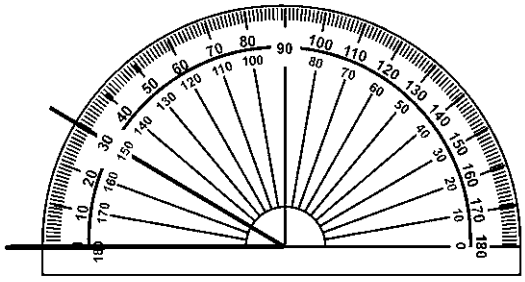

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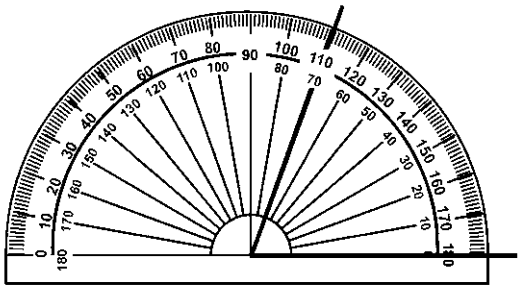

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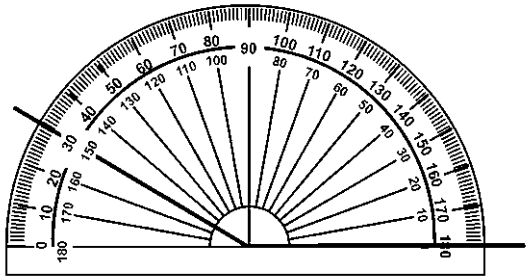
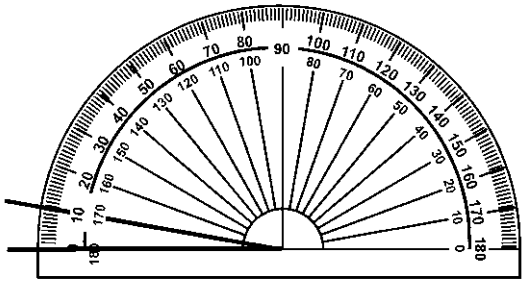
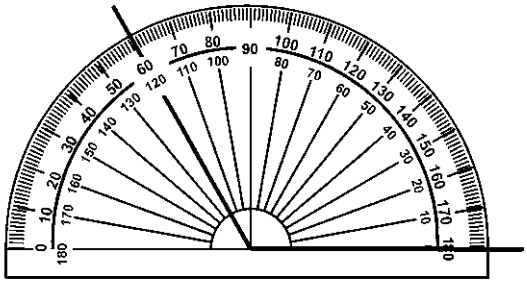


5.

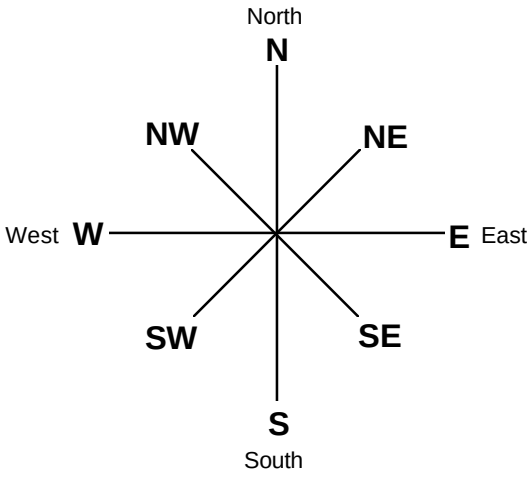


6.

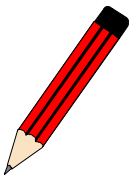


Exercise 9

Reminders



NE - stands for **North-east** .
North-east is half-way between North and East.

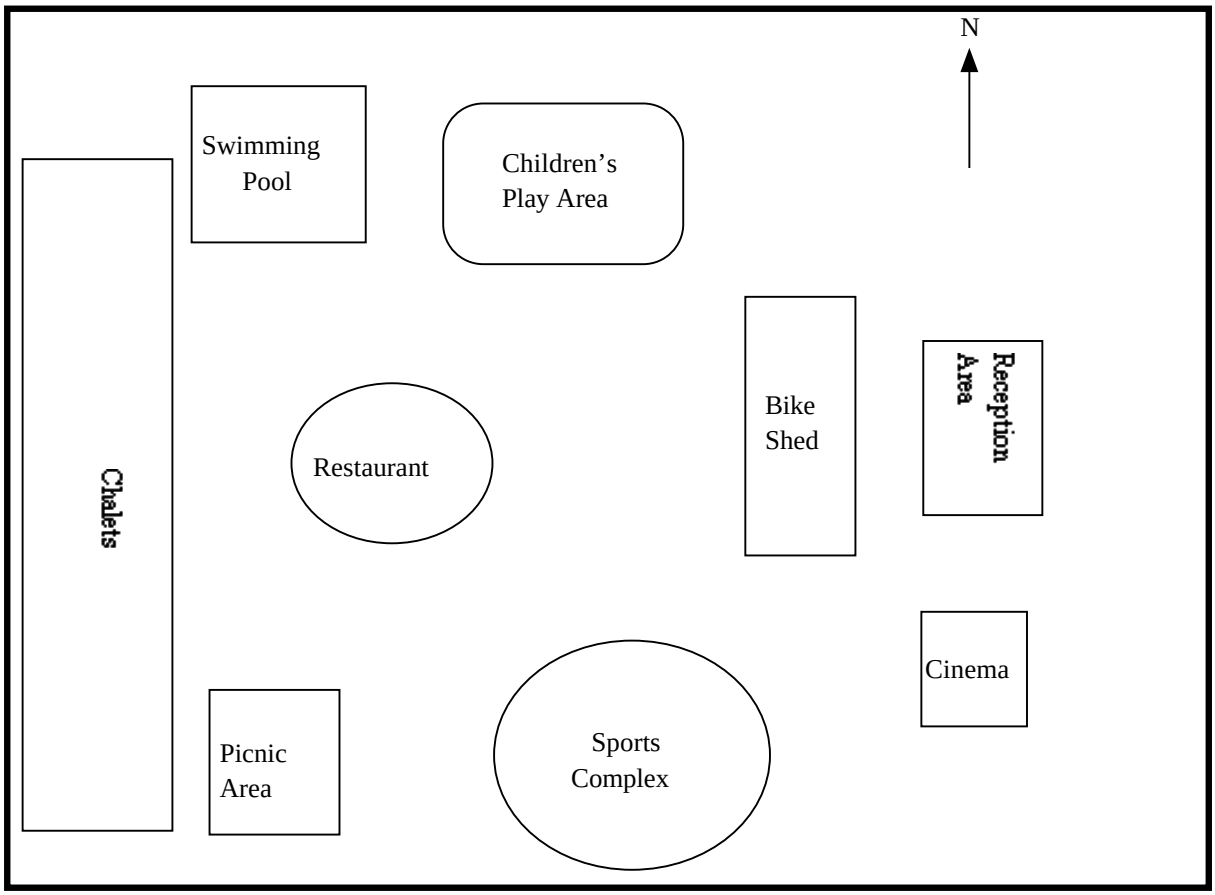


1. In your jotter write down what you think each of these stands for :

   a) NW b) SW c) SE

2. Make a tracing of the compass shown above.

3. Look at the plan of Laguna Holiday Village.



Use the map on the previous page to help you decide whether the sentence is **true** or **false**.

Use the tracing of the compass to help you.

Write your answers into your jotter.

a) The cinema is south of the reception area.

b) The children's play area is west of the swimming pool.

c) If you go north-west from the picnic area you will come to the restaurant.

d) The bike shed is west of the reception area.

e) The sports complex is north of the children's play area.

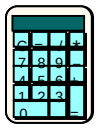
f) The cinema is south-east of the swimming pool.

g) The restaurant is west of the bike shed.

h) South-west of the reception area you will come to the sports complex.

Exercise 10

You may use a calculator for this exercise



Reminders

Maps and plans are drawn to represent something in real life.

The scale of the map or plan is important.

It tells us how to turn the length on the plan into the real life length.

It tells us what units to use in our answer.

Examples

1. Scale : **1 cm represents 10 m**

   What real life distance would 4 cm on the plan represent?

   Real life distance = plan length x scale

   On your calculator, 4 x 10 = 40

   The real life distance is 40 m.

2. Scale : **1 cm represents 2 km**

What real life distance would 6.3 cm on the plan represent?

Real life distance = plan length x scale

On your calculator, 6.3 x 2 = 12.6

The real life distance is 12.6 km.

3. Scale : **1 cm represents 20 cm**

What real life distance would 1.8 cm on the plan represent?

Real life distance = plan length x scale

On your calculator, 1.8 x 20 = 36

The real life distance is 36 cm.

Wherever possible - set out your working

1. **Scale : 1 cm represents 30 cm**

   What distance in real life would each of these lengths on a map represent?

   a) 4 cm b) 8 cm c) 5.6 cm

2. **Scale : 1 cm represents 50 m**

   What distance in real life would each of these lengths on a plan represent?

   a) 3 cm b) 9.1cm c) 3.2 cm

3. **Scale : 1 cm represents 100 km**

   What distance in real life would each of these lengths on a map represent?

   a) 2 cm b) 4.5 cm c) 1.1 cm

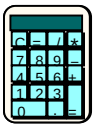
4. **Scale : 1 cm represents 25 cm**

   What distance in real life would each of these lengths on a map represent?

   a) 5 cm b) 14 cm c) 12.9 cm

Exercise 11

You may use a calculator for this exercise



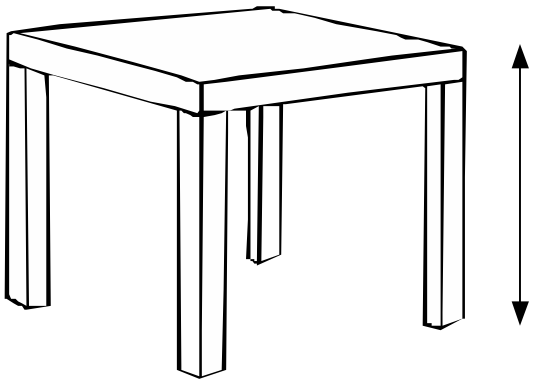
Each of the pictures in this exercise is a scale drawing of the real life object.

For each drawing :

a) Use a ruler to measure the height of the object.
Write the answer (in centimetres) into your jotter.

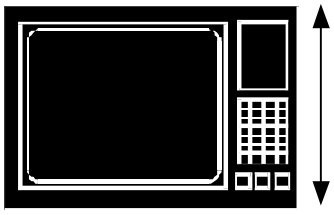
b) Use the scale for each one to calculate the height in real life.
Write your answer into your jotter.

1.



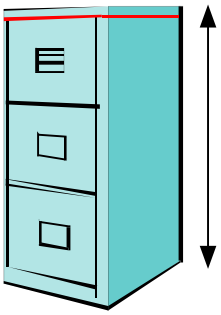
Scale 1 cm to 20 cm

2.



Scale 1 cm to 10 cm

3.

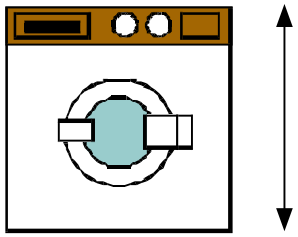


Scale 1 cm to 40 cm

4.

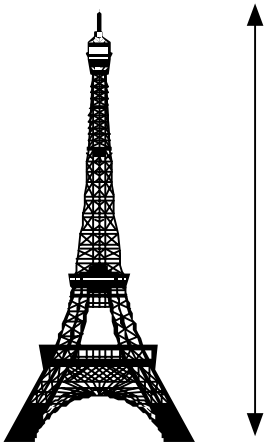
Scale 1 cm to 150 km

5.



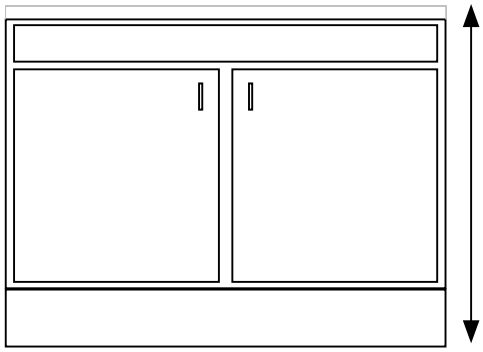
Scale 1 cm to 30cm

6.



Scale 1 cm to 50 m

7.

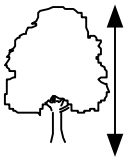


Scale 1 cm to 20 cm

8.

Scale 1 cm to 2 m

9.



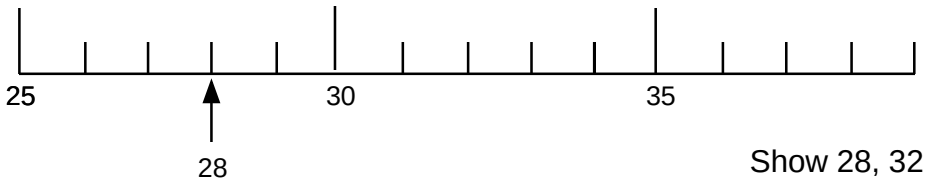
Scale 1 cm to 4 m

Scales Worksheet 1

On each scale use an arrow to point to the numbers given.

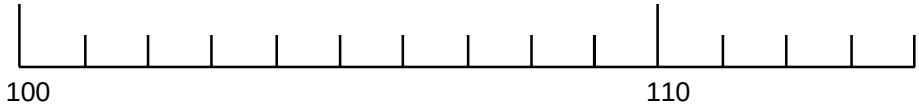
The first one has been done for you.

1.



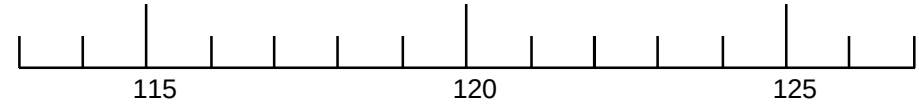
Show 28, 32 and 36

2.



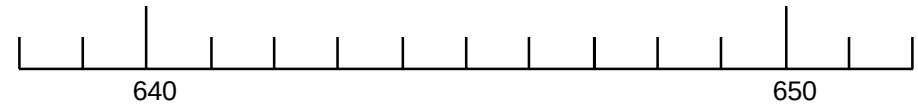
Show 104, 109 and 116

3.



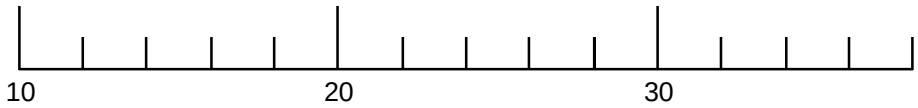
Show 114, 119 and 123

4.



Show 638, 647 and 651

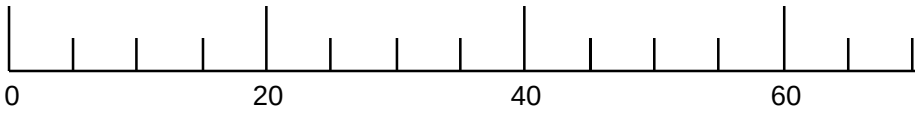
5.



Show 16, 28 and 34

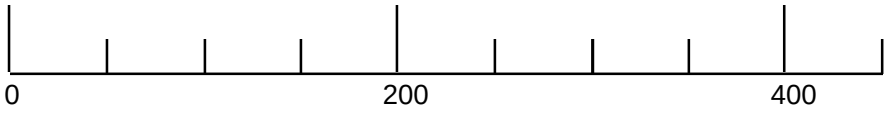
Turn over

6.



Show 10, 35 and 65

7.

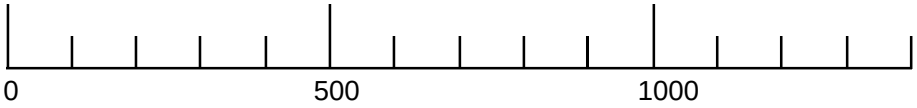


Show 100, 300 and 350

8.

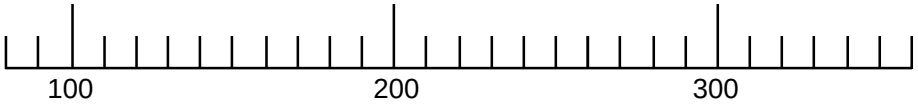
Show 10, 26 and 54

9.



Show 400, 700 and 1200

10.



Show 90, 120 and 330

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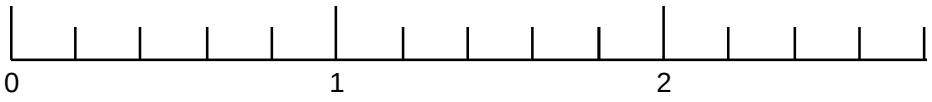
Scales Worksheet 2

On each scale use an arrow to point to the numbers given.

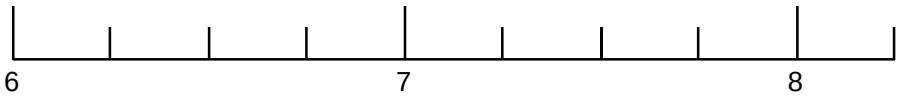
The first one has been done for you.

1.



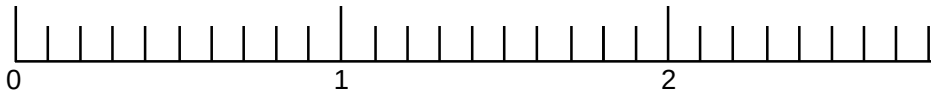
Show 0.2, 1.6 and 2.4

2.



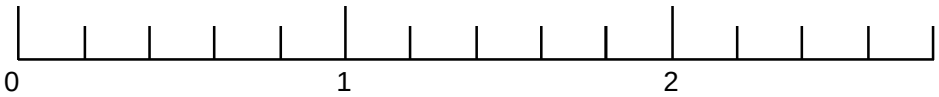
Show 6.5, 7.25 and 7.75

3.



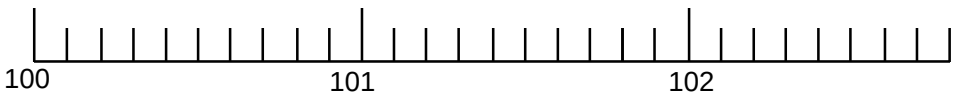
Show 0.1, 0.6 and 1.5

4



Show 0.8, 1.4 and 2.6

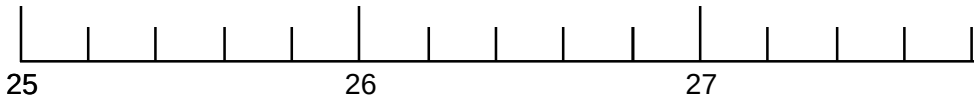
5.



Show 100.5, 101.2 and 101.9

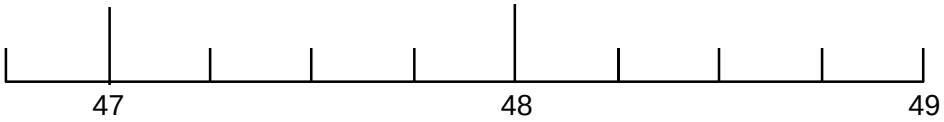
Turn over

6.



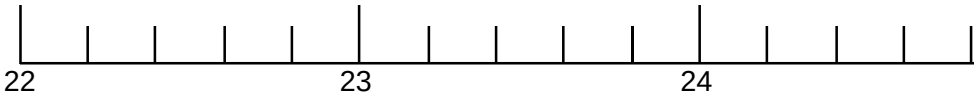
Show 25.2 and 26.6

7.



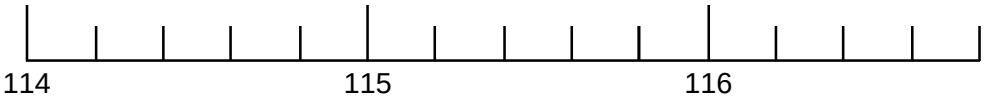
Show 47.5 and 48.25

8.



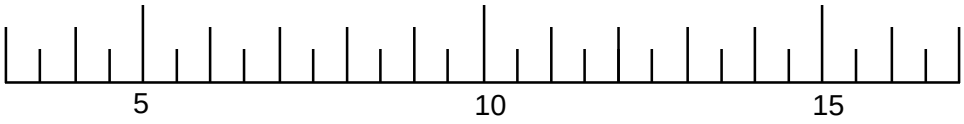
Show 23.2 and 24.6

9



Show 114.8 and 116.4

10.



Show 6 and 13

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