# 2022 national curriculum tests

# Key stage 2

## Mathematics

# Paper 2: reasoning

# MODIFIED LARGE PRINT

**First name** _____

**Middle name** _____

**Last name** _____

**Date of birth**   **Day** _____ **Month** _____ **Year** _____

**School name** _____

**DfE number** _____

## Note to markers

This paper should be marked using the standard mark schemes for KS2 Mathematics: Paper 2. There is additional guidance on marking some questions in this paper in the Key stage 2 Mathematics amendments to mark schemes – MLP document.

# Instructions

You **must not** use a calculator to answer any questions in this test.

## Questions and answers

You have **40 minutes** to complete this test, plus your additional time allowance.

Follow the instructions for each question.

Work as quickly and as carefully as you can.

If you need to do working out, you can use any space on the page.

Some questions say: 'Show your method.'

For these questions, you may get a mark for showing your method.

**If you cannot do a question, go on to the next one. You can come back to it later, if you have time.**

**If you finish before the end, go back and check your work.**

**1.** **Look at the five numbers below.**

**9 206 499**

**9 215 300**

**9 206 504**

**9 215 298**

**9 206 909**

**Tick or mark the greatest number.**

**2.** One table can seat **8** people.

How many tables are needed to seat **40** people?

_____ **tables**

**3.**   **Write the missing number in the box to make the addition below correct.**

$$400\ 000 + \boxed{\phantom{XXXXXXXX}} + 70$$

$$= \ 430\ 070$$

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## The test continues on the next page

**4.** Children estimated the number of beans in a jar.

The estimates of five children are shown in the table below.

| Amir | 1 310 |
|---|---|
| Olivia | 1 220 |
| Emma | 1 400 |
| John | 1 290 |
| Chen | 1 460 |

The exact number of beans in the jar was **1 380**

**Whose estimate was closest to the exact number?**

_____

**Whose estimate was furthest from the exact number?**

_____

**5.** One tonne is **1 000** kilograms.

A truck can carry a load of **2·3** tonnes.

How many kilograms can the truck carry?

_____ **kg**

**6.** Emma has a **5** litre bag of compost.

She uses **2·75** litres.

How much compost does Emma have left?

_____ **litres**

**7.** In a race, Ali completes a swim, a run and a bicycle ride.

The swim is $\frac{1}{10}$ of the total distance.

The run is $\frac{3}{10}$ of the total distance.

What fraction of the total distance is the bicycle ride?

_____

**8.** **Look at the five fractions below.**

$$\frac{5}{8} \qquad \frac{14}{8} \qquad \frac{19}{8} \qquad \frac{23}{8} \qquad \frac{26}{8}$$

**Tick or mark the improper fraction that is equivalent to** $2\frac{3}{8}$

**9.** The pictogram below shows how many DVDs a shop sells in one week.

**Monday** ●●●

**Tuesday** ●●●●●●●●

**Wednesday** ●●●●

**Thursday** ●●●●
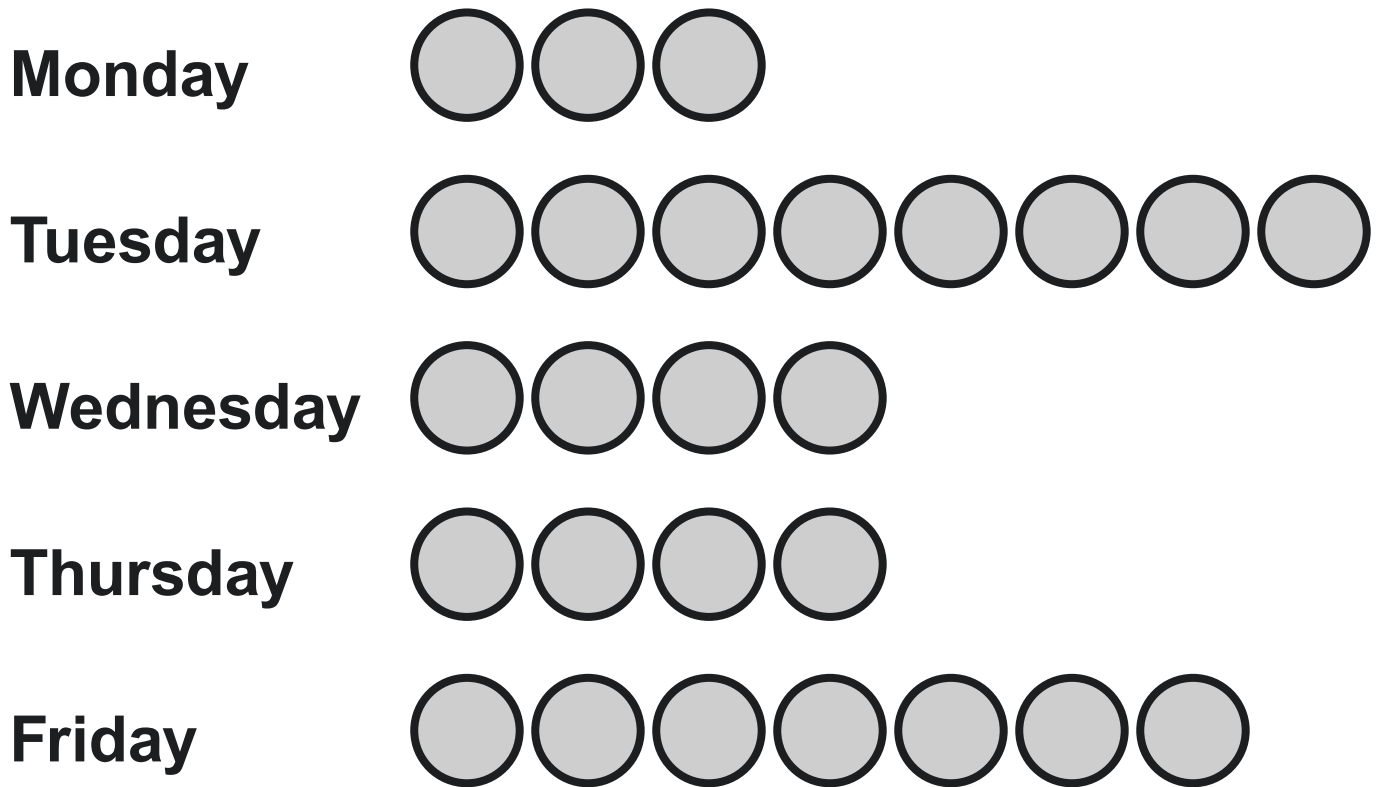
**Friday** ●●●●●●●

On Monday **24** DVDs were sold.

How many DVDs were sold on Friday?

**10.** A shop has an offer on cereal:

Buy one box for **£1·90**
Get the second box half price.

Ali buys two boxes of cereal.
How much must he pay altogether?
Show your method.

£ _____

**11.**   **a)   Write the missing value in the box.**

$$\frac{3}{10} = \frac{\boxed{\phantom{00}}}{20}$$

**b)   Write the missing value in the box.**

$$\frac{12}{15} = \frac{4}{\boxed{\phantom{00}}}$$

**12.** William has four parcels.

Their masses are shown below.

## 1·4 kg     1 500 g     2 kg     300 g

Write the masses in order, starting with the **heaviest**.

Heaviest  _____

_____

_____

_____

**13.** **Look at the graph below that shows Dev's bike ride.**
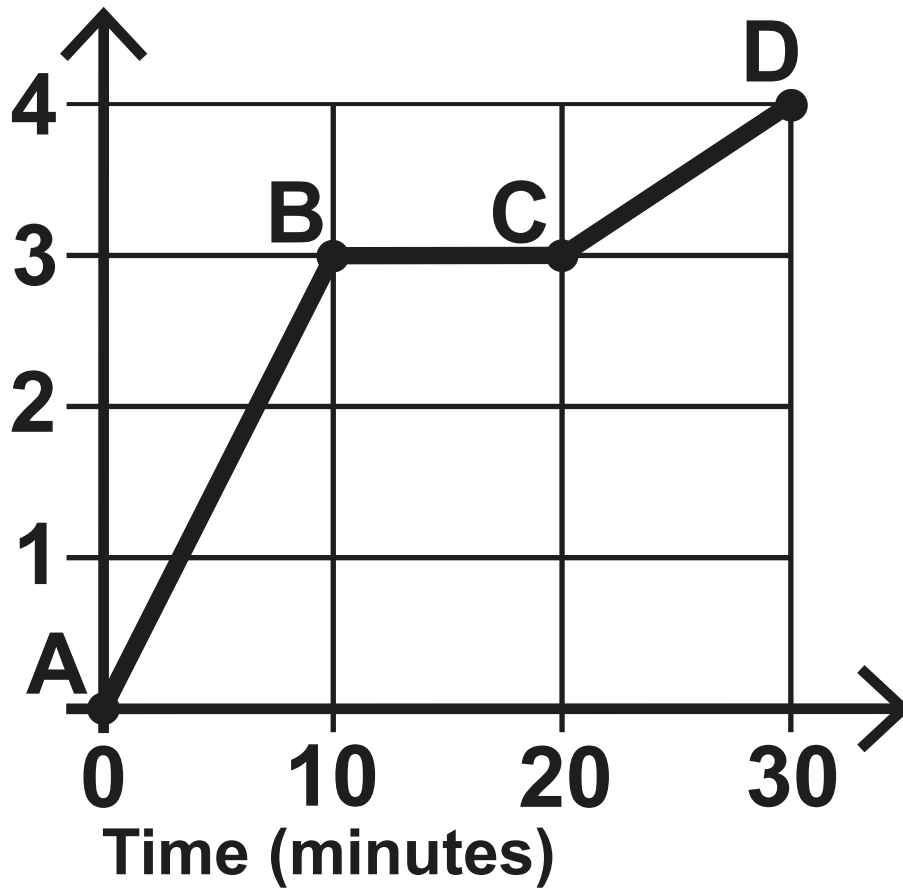
**Look at the diagram below.**

| A to B | | Dev rests for **10** minutes. |
|--------|---|------------------------------|

| B to C | | Dev cycles **3 km** in **10** minutes. |
|--------|---|----------------------------------------|

| C to D | | Dev cycles **1 km** in **10** minutes. |
|--------|---|----------------------------------------|

**Draw lines to match each part of Dev's journey to the correct sentence.**

**14.** One **850 ml** bottle of squash makes **17** drinks.

How many millilitres of squash are in each drink?

_____ **ml**

**15.** Look at the three signs below.

$$= \quad > \quad <$$

Write the sign that should be put in the box to make each of the four statements below correct.

a) $1 \times 2 \times 3$ ☐ $1 + 2 + 3$

b) $2 \times 2 \times 2$ ☐ $2 + 2 + 2$

c) $1 \times 10 \times 10$ ☐ $1 + 10 + 10$

d) $0 \times 10 \times 10$ ☐ $0 + 10 + 10$

**16.** **Look at the five numbers below.**

**28·07**

**28·65**

**28·71**

**28·75**

**28·97**

**Tick or mark the numbers that round to 28·7**

**17.**    **6** divides into **40** with a remainder of **4**

Write one other number that divides into **40** with a remainder of **4**

_____

**18.** The sign below shows the number of empty spaces on each level of a car park at **10 am.**

Empty Spaces

Level **2**     **511**

Level **1**     **268**

In this car park, each level has **800** spaces.

**What is the total number of cars parked in the car park at 10 am?**

**Show your method.**

_____

**19.** **Look at the circle below.**

**It is not actual size.**
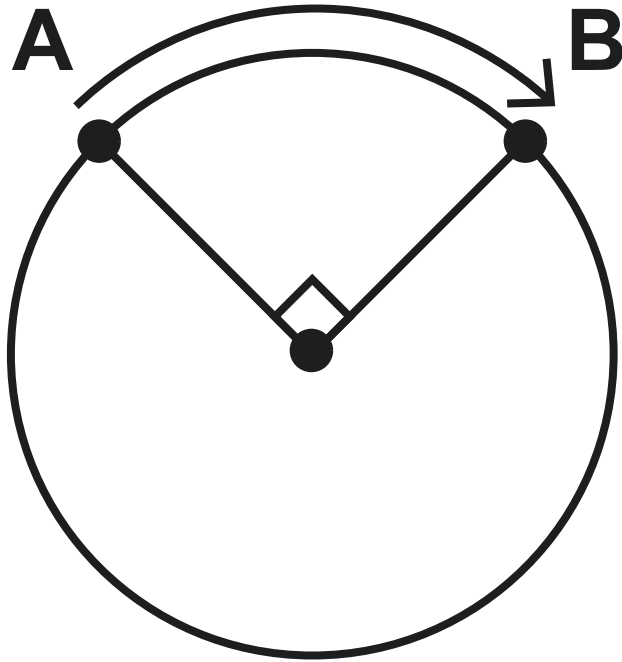


**The circumference of the circle is 60 centimetres.**

# What is the distance around the edge of the circle from **A** to **B**?

_____ **cm**

**20.** There are **432** places at a dance school.

There are two age groups.

The table below shows the number of classes and the number of pupils in each class for each age group at the moment.

| Age in years | Number of classes | Number of pupils in each class |
|---|---|---|
| 7 – 12 | 15 | 16 |
| 13 – 18 | 10 | 18 |

**How many more pupils can join the dance school?**

**Show your method.**

_____

## 21. In this question
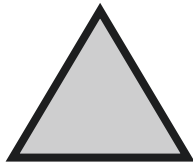
△ stands for a number
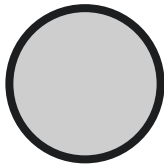
◯ stands for a different number

a) Look at the addition below.

$$\triangle + \triangle + \triangle = 48$$

Work out the value of △

△ = _____

**b)** **Look at the addition below.**

$$\bigcirc + \triangle + \bigcirc + \triangle = 92$$

**Work out the value of** $\bigcirc$

$$\bigcirc = \underline{\hspace{5cm}}$$

**22.** You can make green paint by mixing:

**250 ml** of blue paint

**1 150 ml** of yellow paint.

Stefan wants to make some of this green paint.

He uses **750 ml** of blue paint.

## How much green paint does he make?

## Show your method.

_____ ml

**23.** Adam has a bag of fruit that weighs **1·25** kilograms.

He takes out a banana.
Now the bag of fruit weighs **1·1 kg.**

Next, he takes out an orange.
Now the bag weighs **920 g.**

**How much more does the orange weigh than the banana?**

**Show your method.**

_____ g

**24.** **Look at the diagram below.**

**It is not to scale.**
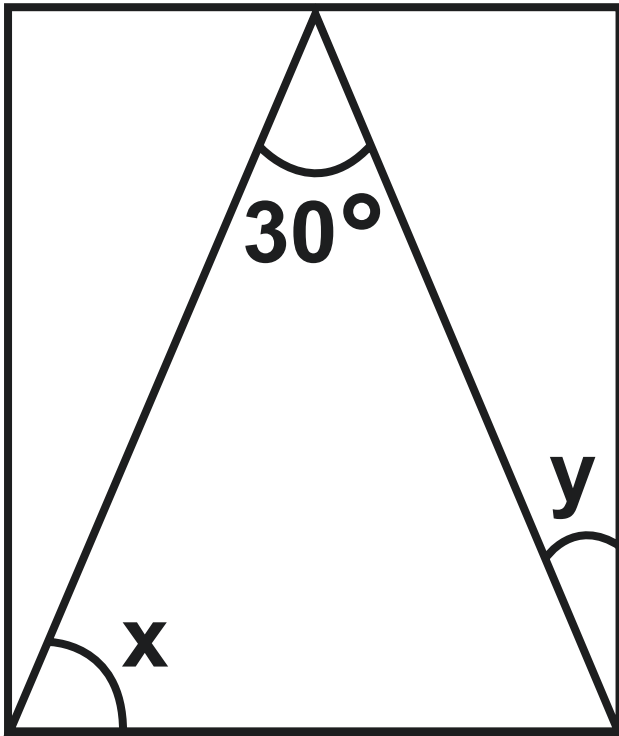


**An isosceles triangle is drawn inside a rectangle.**

**Calculate the sizes of angles x and y.**

**Show your method.**

x = _____ °

y = _____ °

**25.**   **Look at the diagram below.**
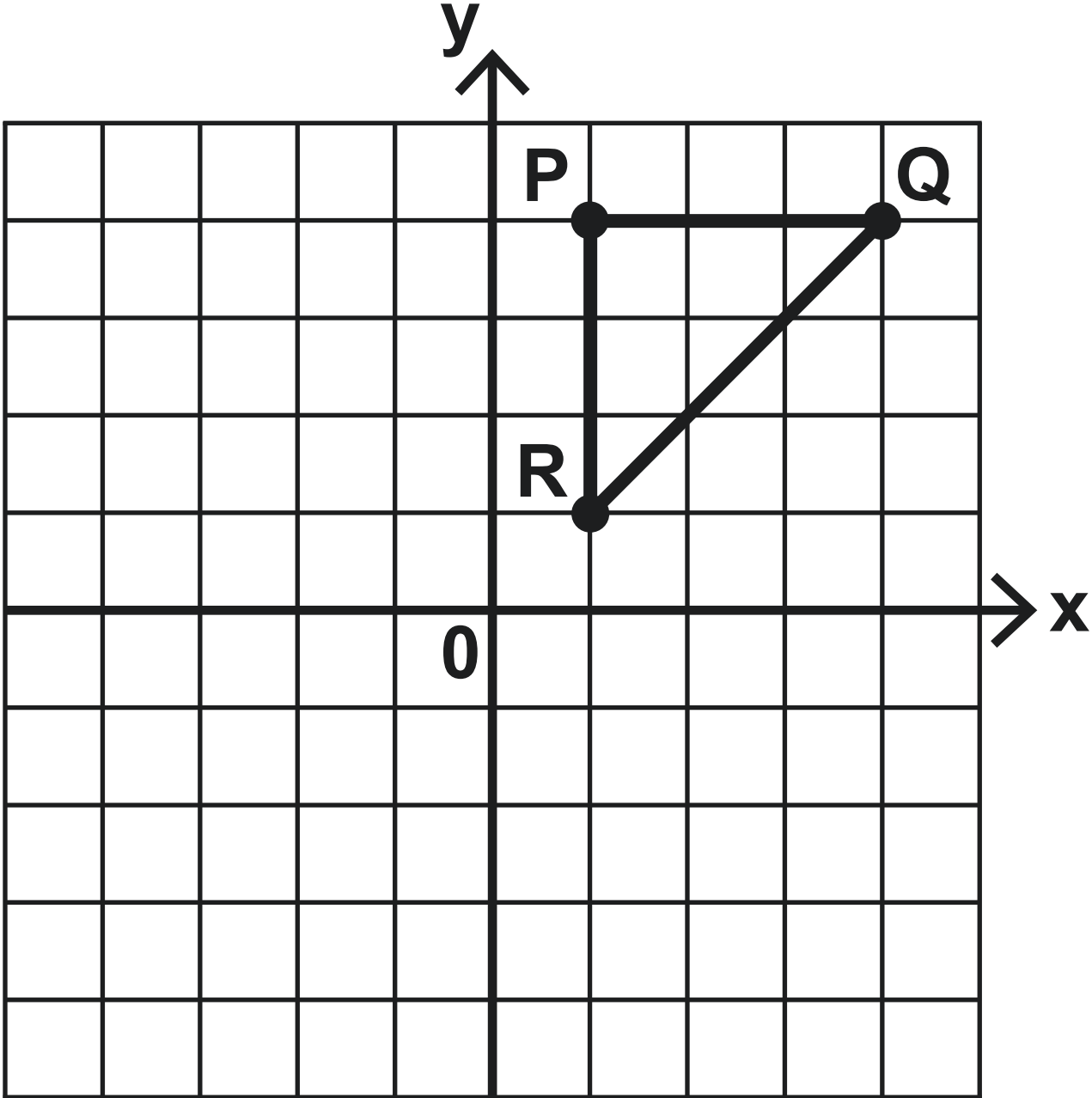
Triangle **PQR** is drawn on a coordinate grid.

Each square of the grid is **1** unit.

The triangle is translated **6** units down.

Mark the point **A** that point **Q** moves to.

The new triangle is then reflected in the y–axis.

Mark the point **X** that point **A** moves to.

## End of test

**Standards & Testing Agency**

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