ICAS.

PAPER

C

2020 MATHEMATICS

TIME ALLOWED: 45 MINUTES

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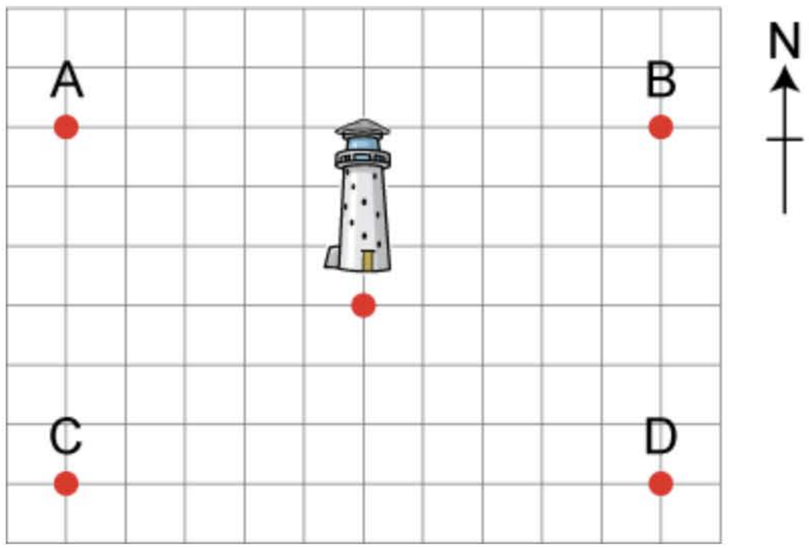
ICAS assessments

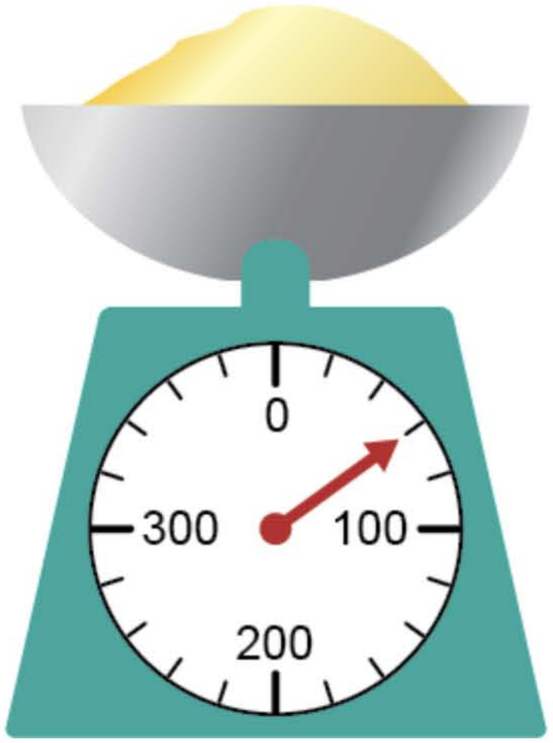
There is hidden treasure 5 units west and 3 units north of the lighthouse.



Where is the treasure hidden?

- [ ] A
- [ ] B
- [ ] C
- [ ] D

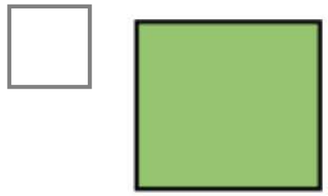
Julie is weighing custard powder using a scale. The unit of the scale has been removed.

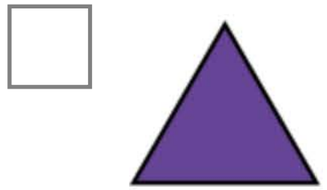


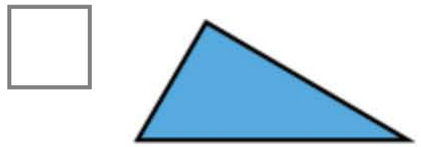
What is the unit of measurement of the scale?

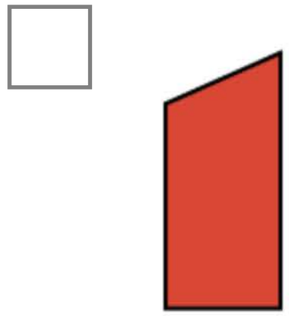
- [ ] centimetres
- [ ] millilitres
- [ ] grams
- [ ] seconds

Which shape has exactly two right angles?









9 + 600 + 3000 = ?

What must ? be?

- [ ] 963
- [ ] 9603
- [ ] 3069
- [ ] 3609

? ÷ 9 = 3

What must ? be?

- [ ] 3
- [ ] 6
- [ ] 12
- [ ] 27

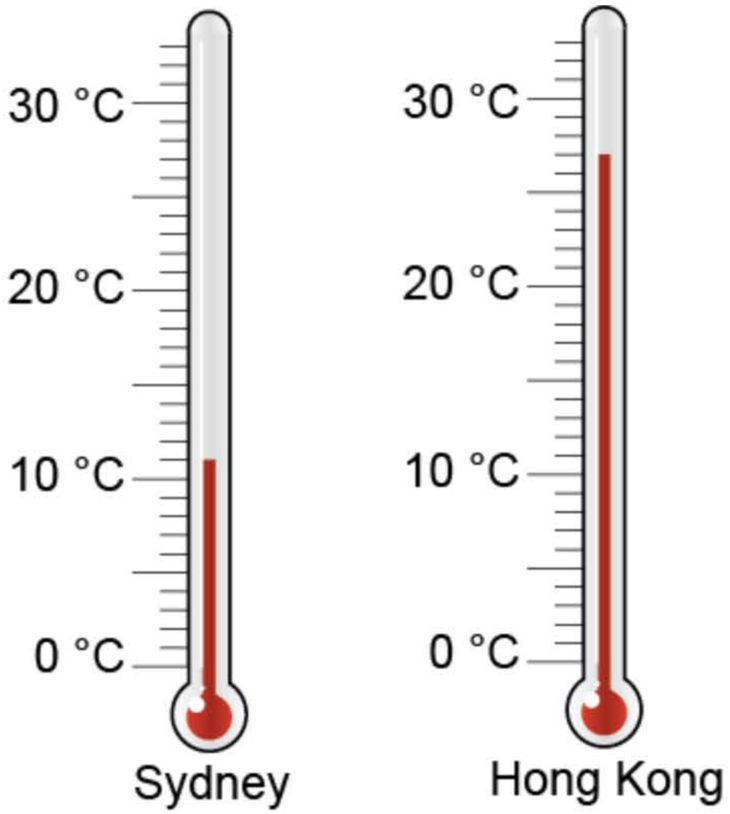
Nathan is using a recipe to make some muffins.

The recipe requires 30 g of butter to make 10 muffins. Nathan has 120 g of butter that he wants to use.

How many muffins can Nathan make using all the butter he has?

- [ ] 4
- [ ] 30
- [ ] 40
- [ ] 50

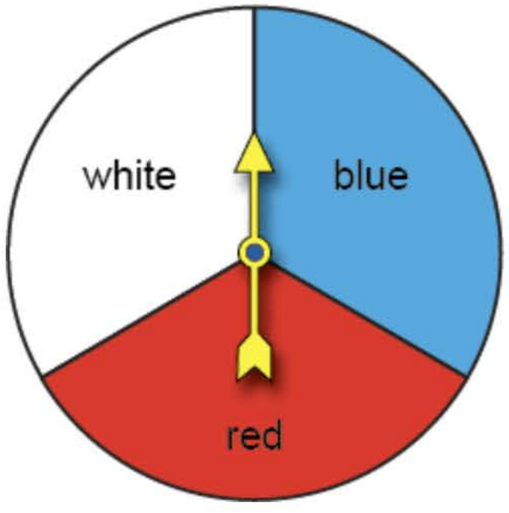
These thermometers show the temperature in two different cities on the same morning.



How much warmer was it in Hong Kong than in Sydney?

- [ ] 13 °C
- [ ] 15 °C
- [ ] 16 °C
- [ ] 18 °C

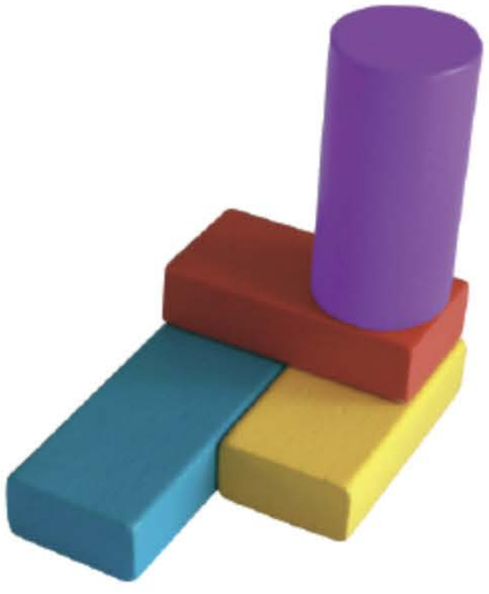
Donald has this spinner.



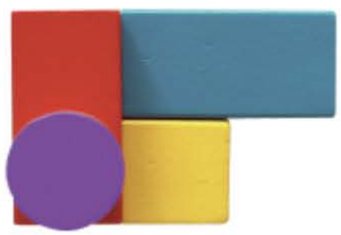
When he spins it, what is the chance that it lands on blue?

- [ ] unlikely
- [ ] likely
- [ ] even
- [ ] certain

Sally made this castle using 4 solids.



Which of these is a view of Sally's castle from above?

☐ 

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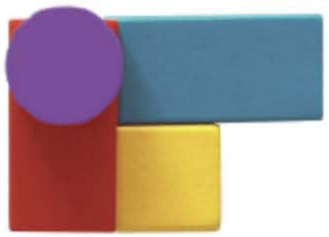
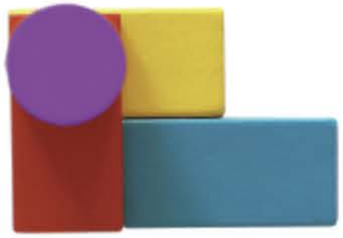
☐ 

☐ 

Meg wrote the following sequence of decimal numbers.

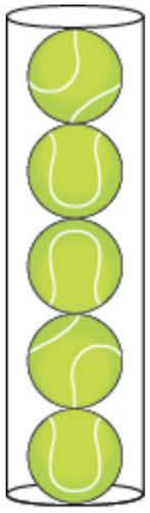
1.2, 2.4, 3.6, 4.8, ?

What must ? be?

- [ ] 5.10
- [ ] 5.9
- [ ] 6
- [ ] 6.2

There are 34 children attending a tennis coaching session.

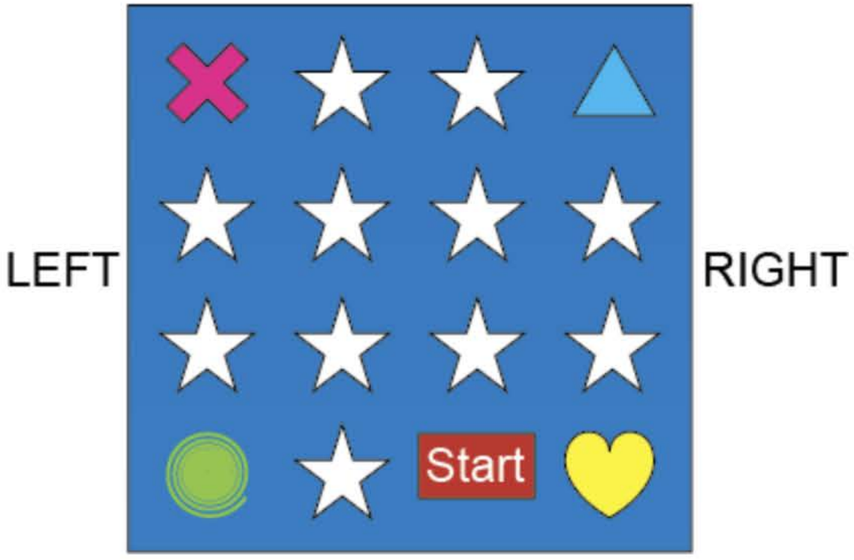
Every child gets a new tennis ball. Tennis balls come in packets of 5.



How many packets does the coach need?

- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7

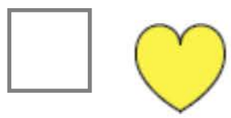
Dani is playing a game.



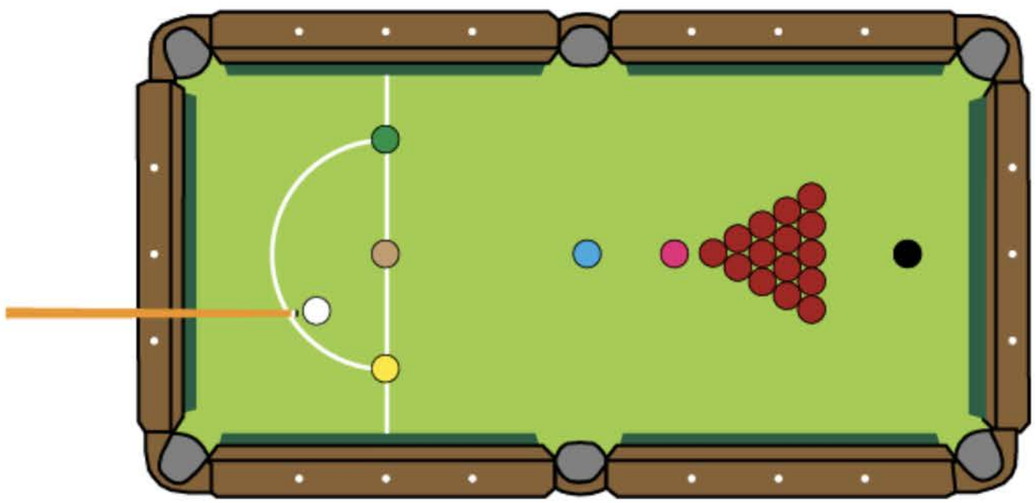
She begins on the Start box and moves as far to the left as she can.

She then moves to the diagonally opposite corner.

Which shape will she finish on?



Richard is playing snooker with his friends.



In snooker, the player hits the white ball into a coloured ball. If the coloured ball goes into one of the six holes around the edge of the table, then he scores some points. The points scoring system is as follows:

Colour	Score
Red	1
Yellow	2
Green	3
Brown	4
Blue	5
Pink	6
Black	7

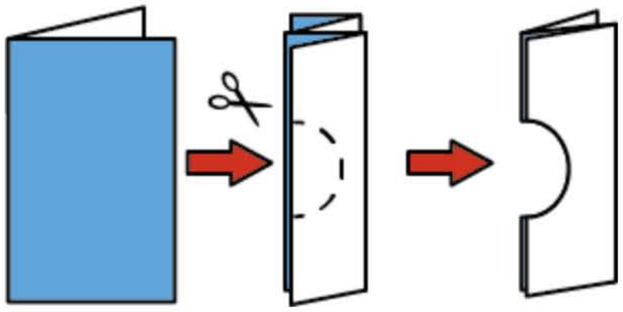
Richard hits 10 red balls, 1 black ball, 1 blue ball and 1 brown ball into the holes.

How many points does he score?

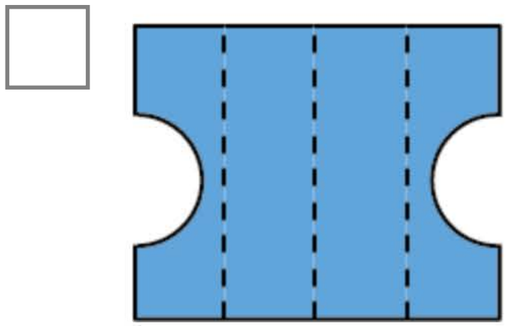
- ☐ 13
- ☐ 26
- ☐ 28
- ☐ 37

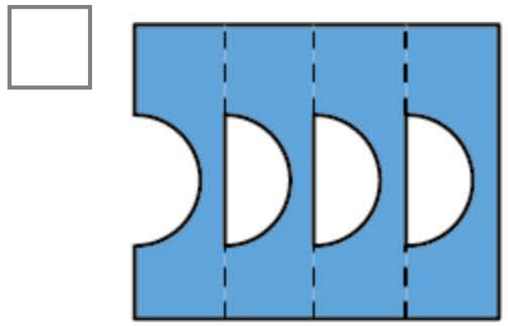
Sharon followed these steps to fold a piece of paper into quarters.

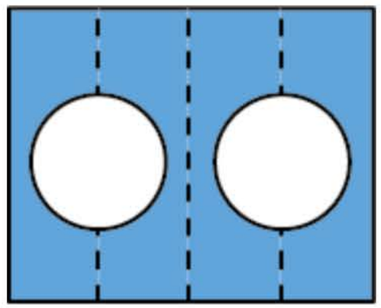
She held the edges together on the left and cut out a semicircle as shown.

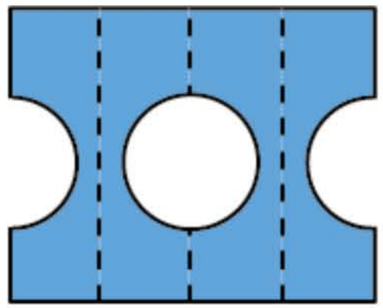


What did her piece of paper look like when she unfolded it?









This is the reward system at Jay's school.

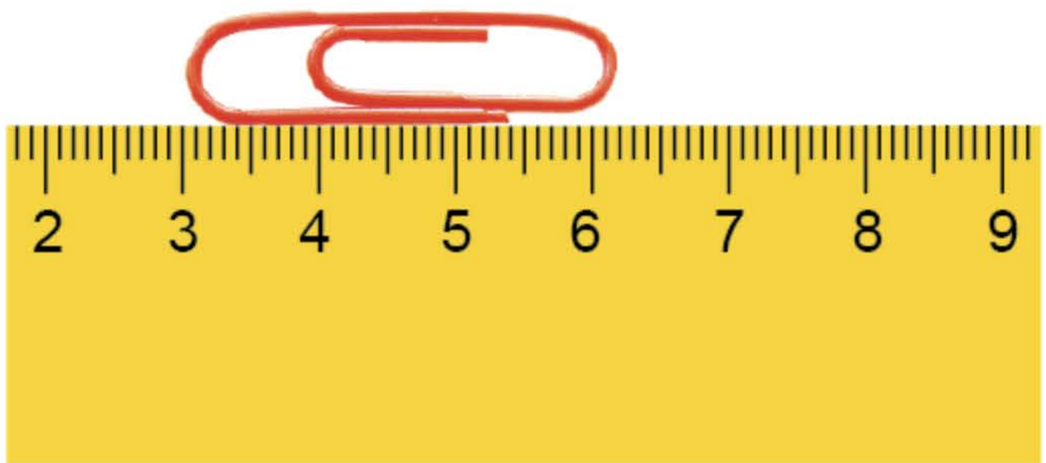
1 Principal's Award	= 2	Gold Awards
1 Gold Award	= 3	Silver Awards
1 Silver Award	= 4	Bronze Awards
1 Bronze Award	= 5	Merit Awards

Jay has 50 Merit Awards. He wants to get a Principal's Award.

How many more Merit Awards does he need to get?

☐ Merit Awards

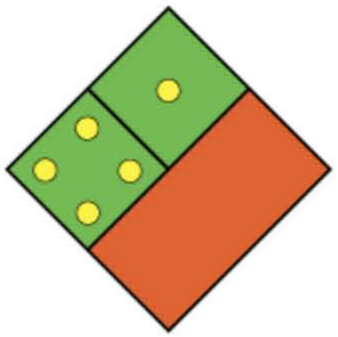
Amanda is measuring a paperclip using a ruler marked in centimetres.



How long is the paperclip, in centimetres?

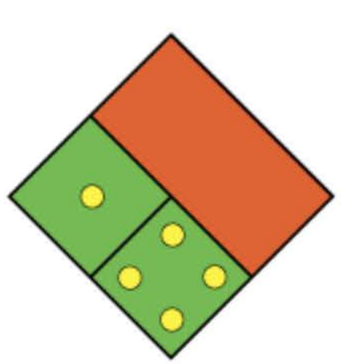
- [ ] 6.2
- [ ] 4.2
- [ ] 3.2
- [ ] 3

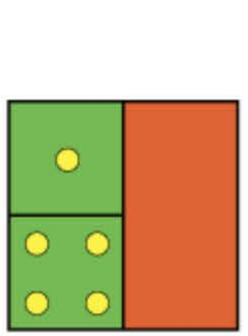
Raj drew this shape.

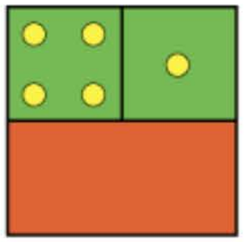


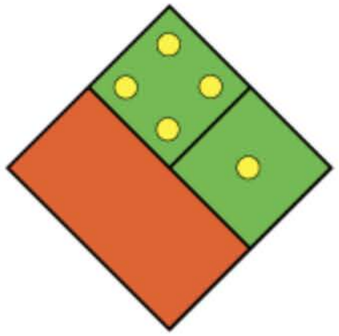
Raj rotated it anticlockwise by a quarter of a turn.

Which of these shows the shape after this rotation?









Which number is between 6.9 and 9.6?

- [ ] 9.96
- [ ] 6.69
- [ ] 9.69
- [ ] 6.96

Ms Clark asked 36 students to choose between ball games and computer games.

She started to put her results in a table.

	Preferred game		
	Computer	Ball	
Boys	9		
Girls		?	21
		19	

How many girls preferred ball games?

- [ ] 8
- [ ] 10
- [ ] 11
- [ ] 13

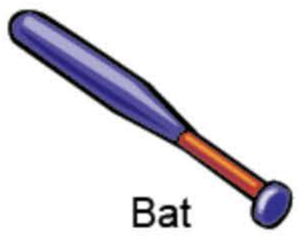
Pete wants to post presents to his son for his birthday.

He can choose from these items.

Baseball
150 grams

Helmet
1450 grams

Glove
390 grams



Bat
450 grams

Which items can Pete post so that the total mass is as close as possible to 2000 grams?

- [ ] all 4 items
- [ ] the helmet and the bat
- [ ] the baseball, bat and glove
- [ ] the helmet, baseball and glove

Ray has these four cards.

He chooses two cards and adds the numbers on them.

How many different totals can Ray get?

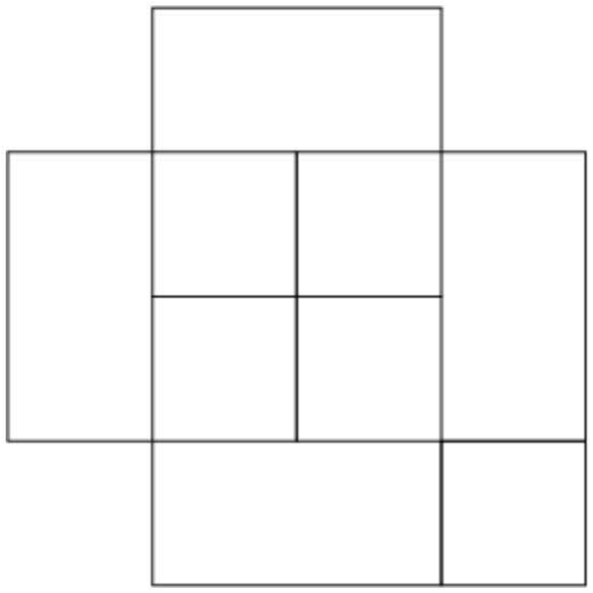
- [ ] 4
- [ ] 5
- [ ] 6
- [ ] 8

Sara wrote down three different numbers less than 10.

The sum of these numbers was 23.

What was the difference between the largest number and the smallest number?

- [ ] 3
- [ ] 4
- [ ] 5
- [ ] 6



How many squares are in this drawing? Write your answer in the rectangle below.

Emma is making a pattern of diamonds using small triangles.

Shape 1
2 triangles

Shape 2
8 triangles

Shape 3
18 triangles

Shape 4

How many small triangles will she need to make the 4th shape in her pattern?

- [ ] 32
- [ ] 28
- [ ] 25
- [ ] 22

The digits 1 to 9 are to be placed in these squares so that

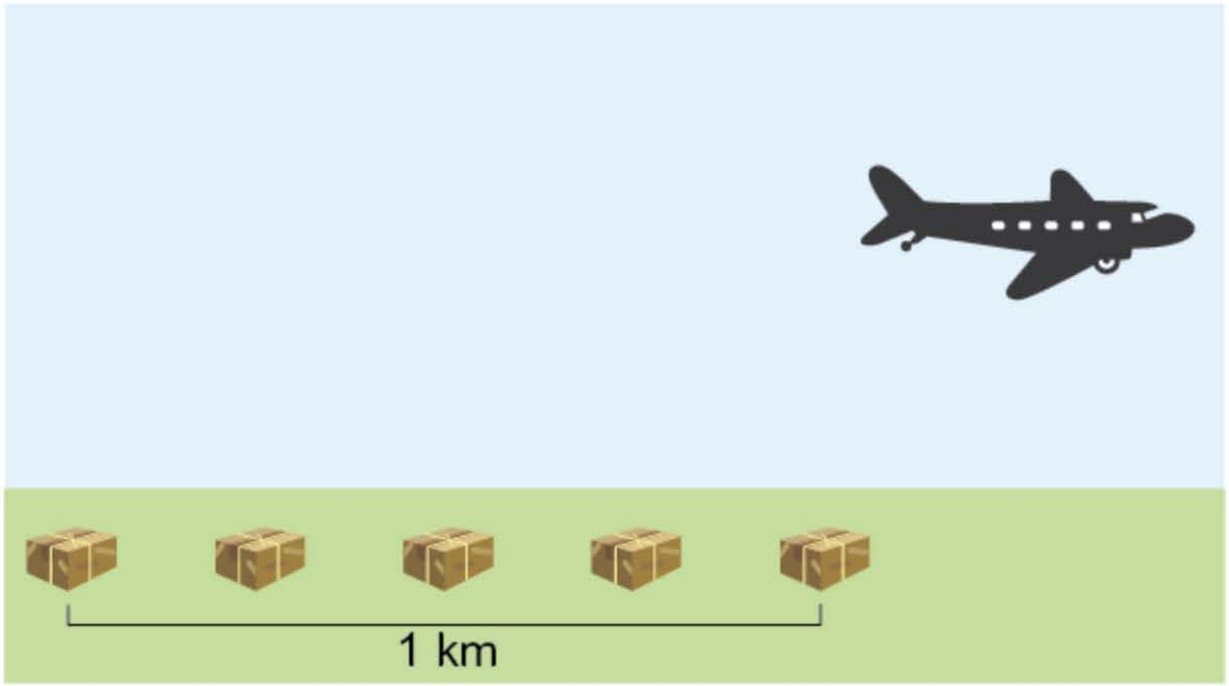
- there is an even number in each corner; and
- the sum of the numbers in each row, column and diagonal is 15.

2		
6	?	

What value must ? be?

- 1
- 3
- 5
- 7

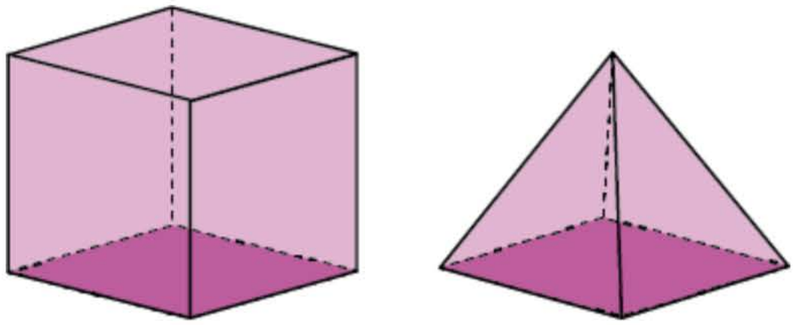
A plane drops 5 parcels of emergency supplies at equal intervals over a distance of 1 kilometre.



About how many metres is between each parcel?

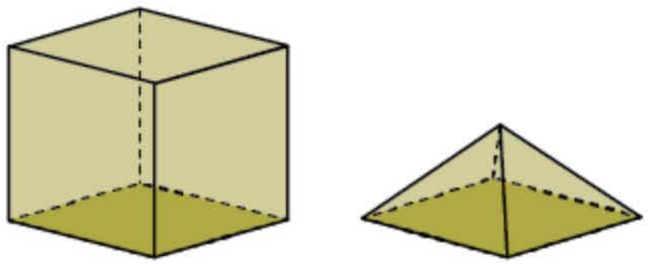
- [ ] 5
- [ ] 200
- [ ] 250
- [ ] 500

The cube and square pyramid below have the same height and base.



The volume of the cube is three times the volume of the pyramid.

Mia has a cube and a square pyramid.

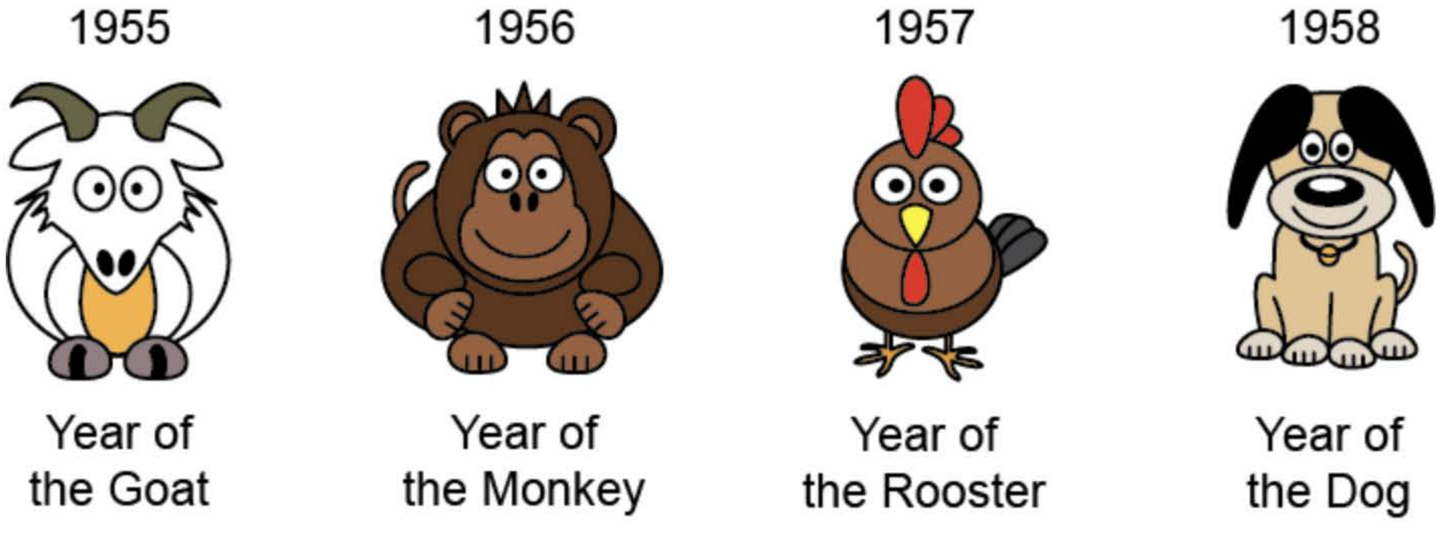


Mia's shapes have the same base, but the cube is twice as high as the pyramid.

How many times greater than the volume of Mia's pyramid is the volume of Mia's cube?

- [ ] 8
- [ ] 6
- [ ] 4
- [ ] 2

There are 12 animal signs in the Chinese calendar. They repeat every 12 years in the same order. For example, people born in 1955 or 1967 were born in the ‘Year of the Goat’.



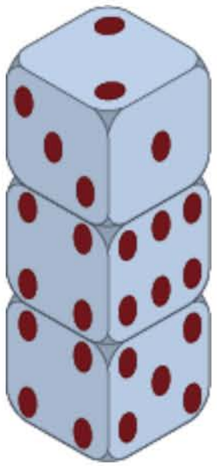
Cai turned 35 on 20 April 2017.

In which ‘Year’ was Cai born?

- [ ] Year of the Dog
- [ ] Year of the Goat
- [ ] Year of the Rooster
- [ ] Year of the Monkey

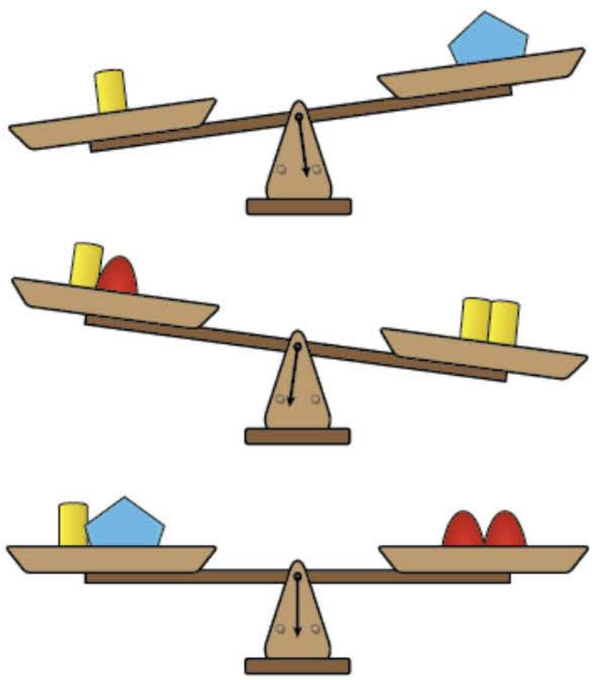
The picture shows a stack of three dice.

The number of dots on the opposite faces of a dice add up to 7.

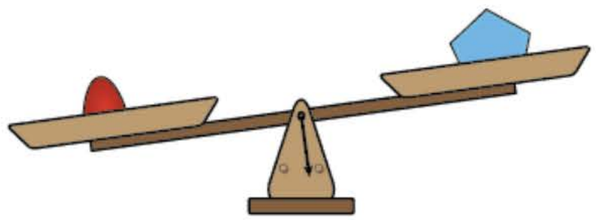


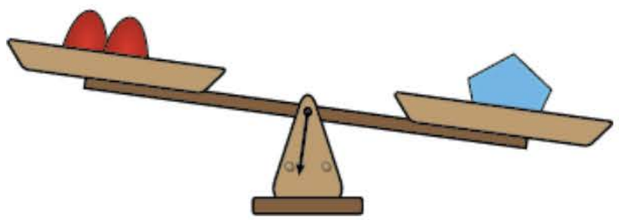
How many dots are **not** shown in the picture? Type your answer in the box.

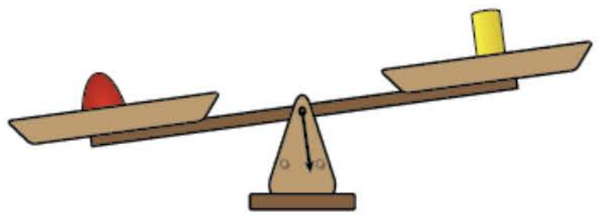
Ravi used a balance to compare the masses of some objects. His results are shown below.

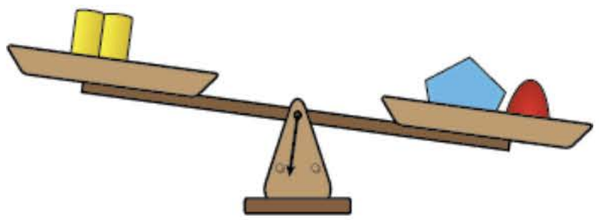


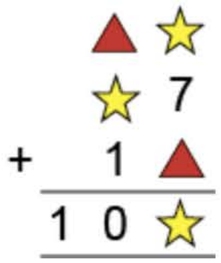
Which of the following must be true?











☐ ▲ = 2 ☆ = 6

☐ ▲ = 3 ☆ = 6

☐ ▲ = 3 ☆ = 5

☐ ▲ = 4 ☆ = 5

Tao, Jin and Lien swam laps in a pool.

Tao started swimming at 3:00 pm.

Jin started swimming at 3:20 pm.

Lien started swimming at 3:25 pm.

They all swam 2 laps per minute and stopped swimming at the same time.

Altogether they swam 240 laps.

At what time did they stop swimming?

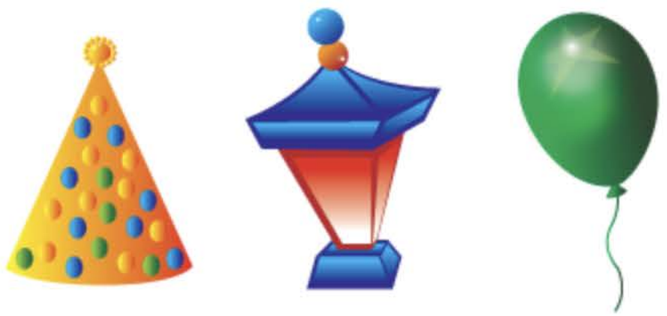
- [ ] 3:40 pm
- [ ] 3:55 pm
- [ ] 4:05 pm
- [ ] 4:15 pm

In the supermarket, 60 cents can buy you the following:

How many cents does  cost?

cents

James bought 60 items for his party.



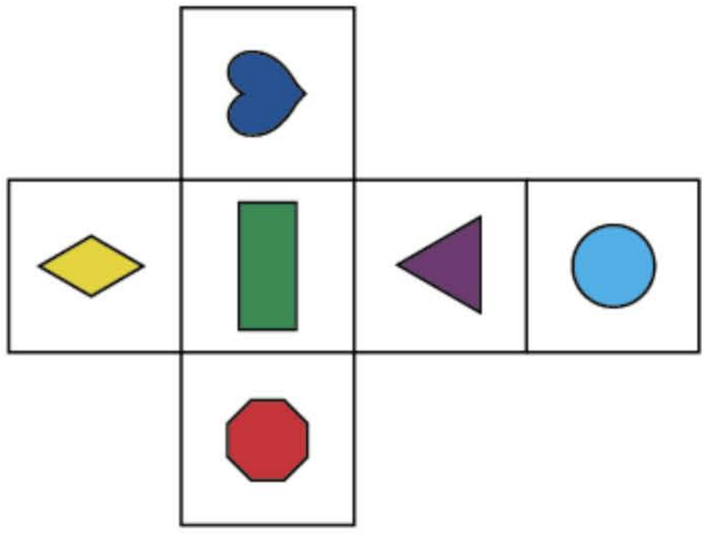
One-third of the items were hats.

James bought ten more balloons than lanterns.

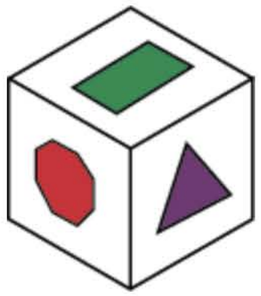
How much did James spend altogether?

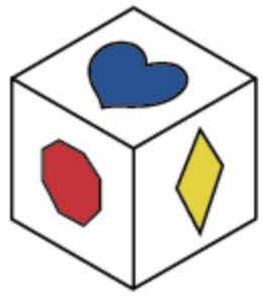
- [ ] $150
- [ ] $140
- [ ] $130
- [ ] $120

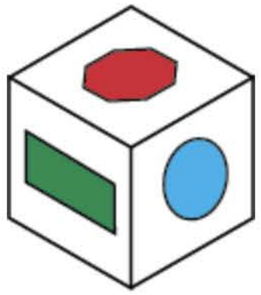
This is the net of a cube.

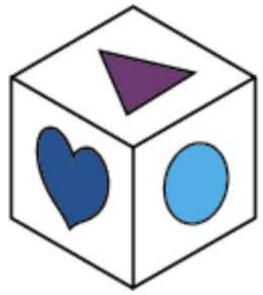


Which one of these cubes is made by folding the net?









Paul had a square piece of paper.

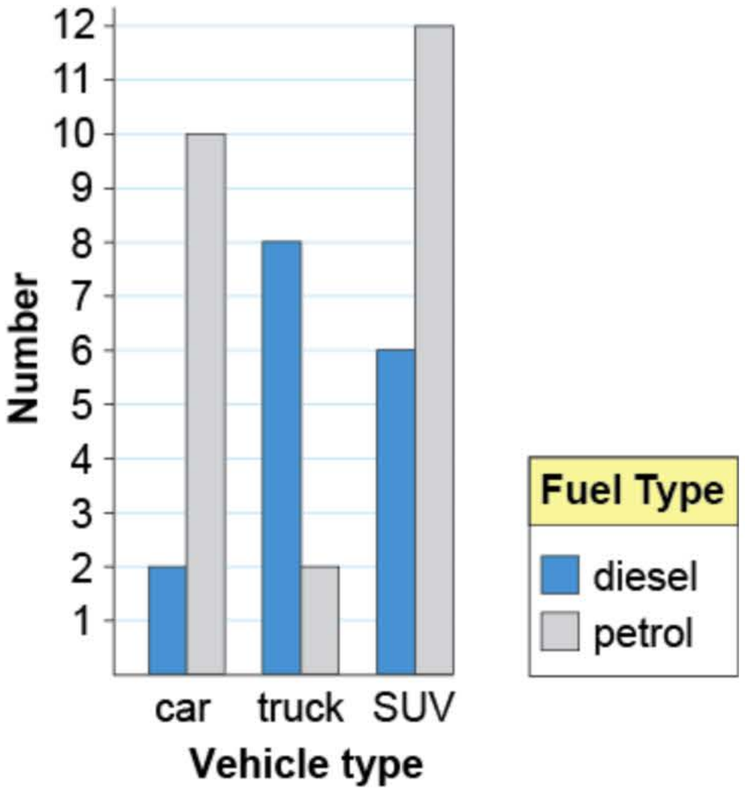
He cut out a rectangle from the paper that was 4 centimetres by 9 centimetres.

The area of the leftover paper was 108 square centimetres.

What was the length of the sides of Paul's original square?

- [ ] 9 centimetres
- [ ] 11 centimetres
- [ ] 12 centimetres
- [ ] 13 centimetres

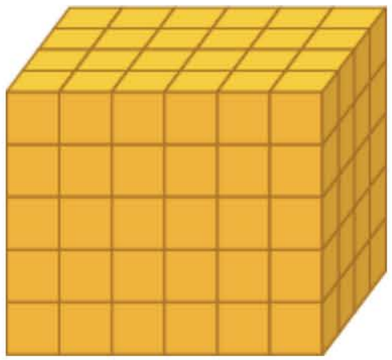
Ben collected data on the vehicles in a car park and graphed his results.



Which statement about the vehicles in the car park is **not** true?

- [ ] He collected data on 40 vehicles.
- [ ] One-fifth of the cars use diesel.
- [ ] One-third of the SUVs use diesel.
- [ ] Two-fifths of the vehicles use diesel.

This solid rectangular prism has been built using identical cubes.



Some of the cubes cannot be seen in this drawing.

How many cubes **cannot** be seen in this drawing?

- ☐ 46
- ☐ 60
- ☐ 74
- ☐ 80

Angela is making cheesecake using this recipe.

Ingredients

- $\frac{1}{4}$ cup butter
- $1\frac{1}{3}$ cups breadcrumbs
- $\frac{1}{4}$ cup honey
- 3 packets cream cheese
- 2 teaspoons vanilla

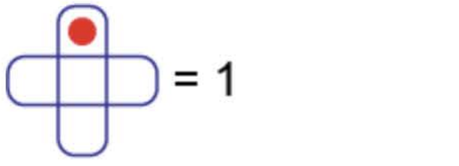
Angela only has a teaspoon, so she estimates these conversions:

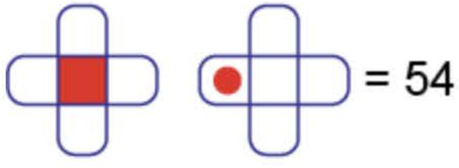
- 1 tablespoon = 4 teaspoons
- 1 cup = 16 tablespoons

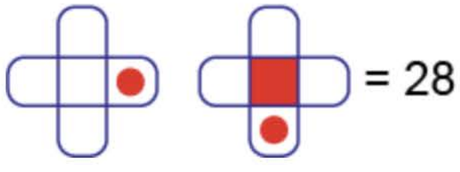
How many teaspoons of honey does Angela need for her recipe?

☐ 64 ☐ 16 ☐ 4 ☐ $\frac{1}{4}$

Lois is playing a code-breaker game on the computer. She is given three clues.







What is the number shown by this code?

- [ ] 639
- [ ] 729
- [ ] 826
- [ ] 936

Results

Question number	Correct answer	Mark	Category	Descriptor
1	A		Space & Geometry	Identify a position on a grid using a compass
2	C		Measures & Units	Understand that grams are a unit for mass
3	D		Space & Geometry	Identify a shape with two right angles
4	D		Number & Arithmetic	Evaluate a numerical expression involving addition
5	D		Algebra & Patterns	Solve a problem using division facts of 3 and 9
6	C		Number & Arithmetic	Solve a problem involving division and multiplication
7	C		Measures & Units	Read two identical thermometers and calculate the temperature difference between them
8	A		Chance & Data	Estimate the likelihood of an event
9	D		Space & Geometry	Identify an object from a different perspective
10	C		Algebra & Patterns	Complete a sequence of decimal numbers
11	D		Number & Arithmetic	Solve a problem involving division and interpreting the remainder
12	D		Space & Geometry	Follow directions to identify a location on a grid map
13	B		Number & Arithmetic	Solve a problem by adding numbers less than or equal to ten
14	D		Space & Geometry	Identify a shape after folding and cutting a piece of paper
15	70		Number & Arithmetic	Solve a problem using multiplication and subtraction
16	C		Measures & Units	Measure the length of an object using a ruler marked in centimetres
17	A		Space & Geometry	Recognise a congruent shape after a quarter turn
18	D		Number & Arithmetic	Order numbers correct to the nearest hundredth
19	D		Chance & Data	Calculate a missing number in a table
20	D		Measures & Units	Determine the objects which have a total mass closest to a target mass
21	B		Chance & Data	Find the maximum number of totals from selecting two of four cards
22	A		Number & Arithmetic	Identify properties of numbers that fit a given condition
23	11		Space & Geometry	Determine the maximum number of squares that can be found in a drawing
24	A		Algebra & Patterns	Follow a pattern to determine the number of units required to make the next shape
25	A		Number & Arithmetic	Use a strategy involving even and odd numbers to solve a problem
26	C		Measures & Units	Divide a length into equal parts
27	B		Space & Geometry	Find the relationship between the volume of two 3D shapes
28	A		Measures & Units	Use information about the date and the Chinese calendar to solve a problem
29	38		Number & Arithmetic	Solve an addition problem involving the numbers on a stack of dice
30	A		Measures & Units	Apply logic to solve a balance problem

Results

Question number	Correct answer	Mark	Category	Descriptor
31	C	☐ ☐	Algebra & Patterns	Determine the value of two symbols that complete a vertical sum
32	B	☐ ☐	Measures & Units	Solve a problem involving staggered start times
33	93	☐ ☐	Algebra & Patterns	Interpret the value of symbols to solve a problem using addition and division
34	C	☐ ☐	Number & Arithmetic	Solve a financial problem given relative numbers of items and their respective costs
35	A	☐ ☐	Space & Geometry	Identify a cube given its net
36	C	☐ ☐	Measures & Units	Solve a problem involving the area and length of rectangles
37	B	☐ ☐	Chance & Data	Interpret a column graph to identify an untrue statement
38	B	☐ ☐	Space & Geometry	Calculate the number of hidden cubes in a rectangular prism
39	B	☐ ☐	Measures & Units	Solve a measurement problem given a conversion table
40	D	☐ ☐	Algebra & Patterns	Model numbers up to 999 using a code

You have completed this practice test.

Your mark is 0 / 40 0%

Click here to reset the test and try again.

ICAS.