

Count sides on 2D shapes

1 Complete the sentences to describe the shapes.

a)

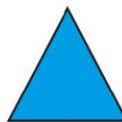


A pentagon has

5

sides.

b)



A triangle has

3

sides.

c)

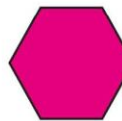


A square has

4

sides.

d)

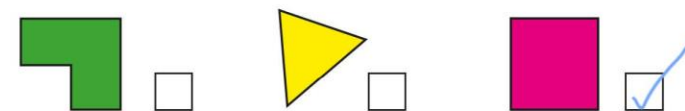
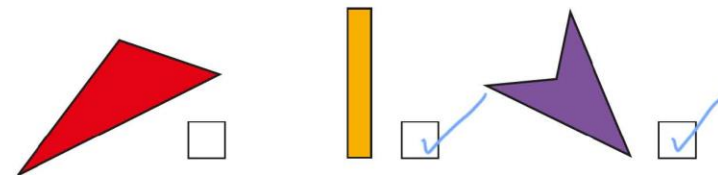


A hexagon has

6

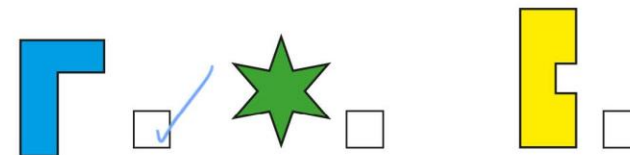
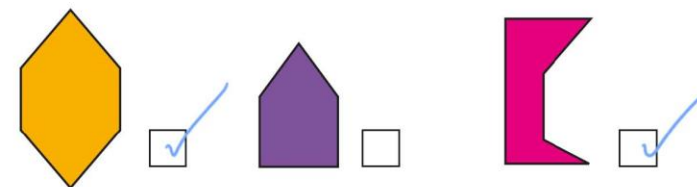
sides.

2 Tick the 4-sided shapes.









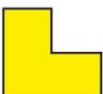
Did your partner tick the same shapes?

3 Tick the 6-sided shapes.



Compare answers with a partner.

4 Complete the table.

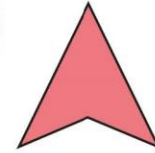
Name	Shape	Number of sides
rectangle		4
triangle		3
pentagon		5
hexagon		6
square		4
octagon		8
hexagon		6



5



This shape is a triangle.

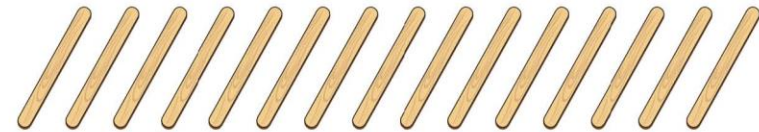


Is Amir correct? No

How do you know?

6

Use 15 lolly sticks to make three shapes.



Draw your shapes.

e.g.



Did your partner make the same shapes?

What happens if you use more or fewer lolly sticks?



Count vertices on 2D shapes

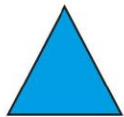
1 Complete the sentences to describe the shapes.

a)



A pentagon has vertices.

b)



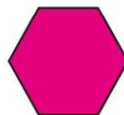
A triangle has vertices.

c)



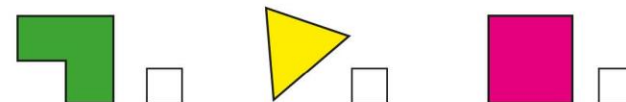
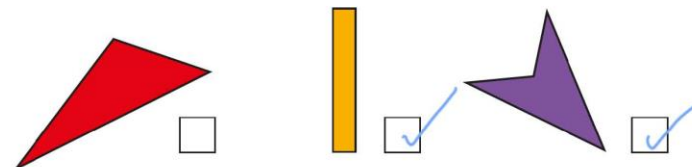
A square has vertices.

d)



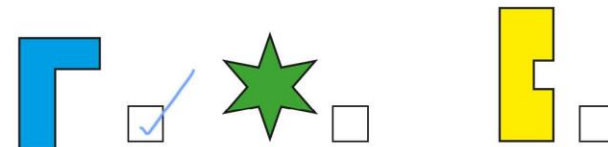
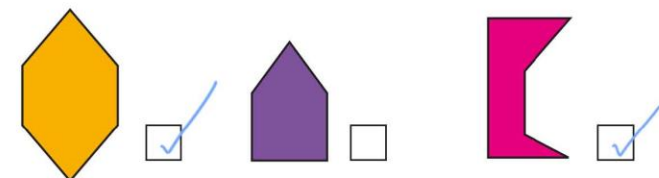
A hexagon has vertices.

2 Tick the shapes with 4 vertices.



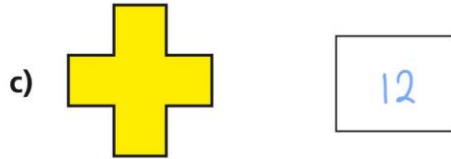
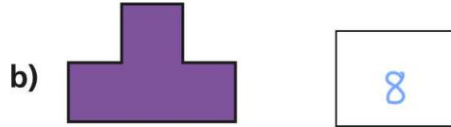
Compare answers with a partner.

3 Tick the shapes with 6 vertices.



Talk to a partner about your answers.

4 How many vertices does each shape have?



How did you count the vertices?

5



My shape has more vertices than a triangle, but fewer than a hexagon.

What shape could Ron have? e.g. square

Compare answers with a partner.

6

Rosie is making a pattern out of shapes.

a) How many vertices are in each term of her pattern?



4



7



11

b) What do you notice?

c) How many vertices will the next term have?

14


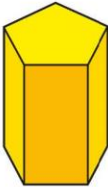

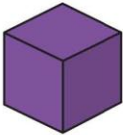
d) Create your own pattern with shapes.

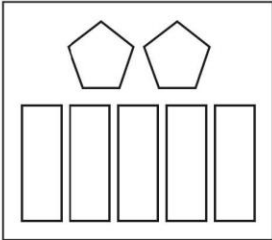
Count the number of vertices in each term.

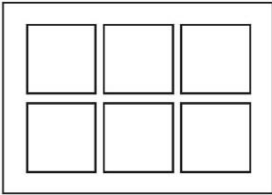
Count faces on 3D shapes

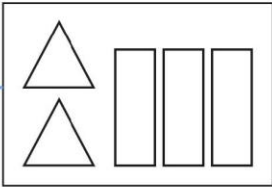


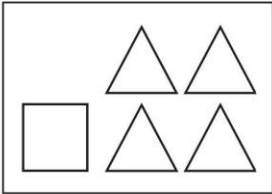
1 Match the shapes to the faces.

















2 Complete the table.

Shape	Name	Number of faces
	Cuboid	6
	pyramid	5
	Cube	6
	triangular prism	5

3



My shape has one curved surface.

What shape is Jack describing? e.g. cylinder

- 4 Match the description to the shape.

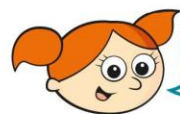
1 circular face and
1 curved surface

2 circular faces and
1 curved surface

4 triangular faces



5



A cube is the
only 3D shape with
6 faces.

Alex has made a mistake.

Name another 3D shape that has 6 faces.

cuboid

- 6 Dexter has 5 of the same 3D shapes.



In total, my
shapes have 10
circular faces.

What shapes has Dexter got?

Dexter has got 5 cylinders

- 7 Dora wants to put a sticker on each face of
some cubes.

She has 60 stickers.

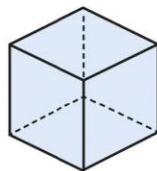
How many cubes can she cover in stickers?

Dora can cover 10 cubes in stickers.

Count edges on 3D shapes

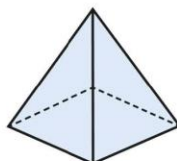
1 How many edges does each shape have?

a)



12 edges

b)



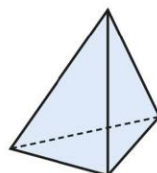
8 edges

c)







9 edges

d)



6 edges

2 Complete the table.

Shape	Name	Number of edges	Number of faces
	cuboid	12	6
	pyramid	8	4
	cube	12	6
	triangular prism	9	5

3

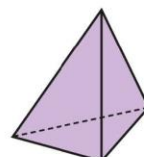
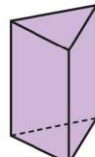
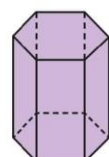
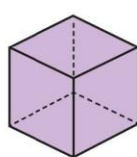


3D shapes always have more edges than faces.

Do you agree? no

Why?

- 4 Use the clues to label the shape with the correct letter.



D

B

A

C

- Shape A has an odd number of edges.
- Shape B has the most edges.
- Shape C has the same number of edges as a cube has faces.
- The edges of shape D are all the same length.

- 5 Write the name of two 3D shapes that have the same number of edges.

e.g.

cube

and

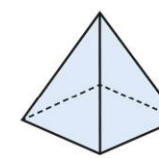
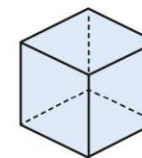
cuboid



6



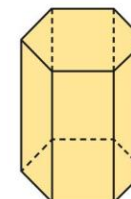
A cube has 6 faces and 12 edges, so a square-based pyramid must have 5 faces and 10 edges. The number of edges is always double the number of faces.



Do you agree with Teddy? No

Why?

- 7 This hexagonal prism has 18 edges.



How many edges do you think a pentagonal prism has?

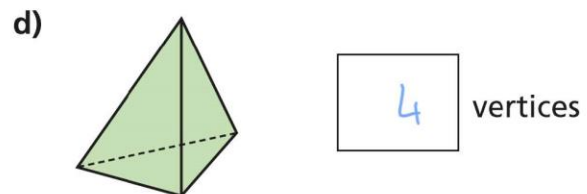
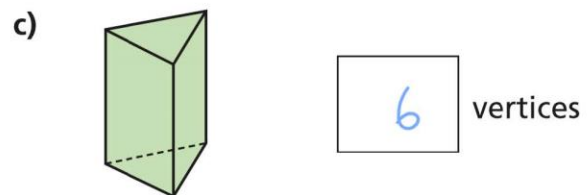
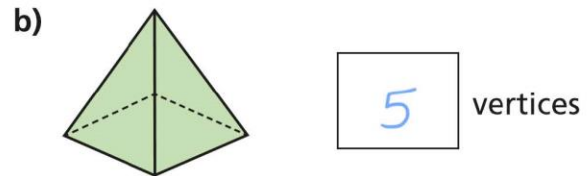
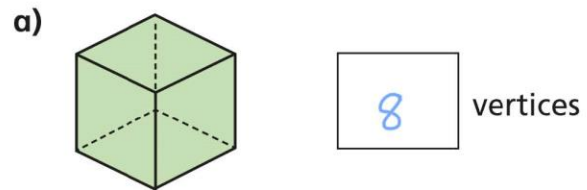
15

Why do you think this?



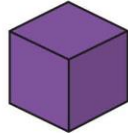
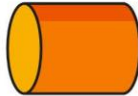


Count vertices on 3D shapes

1 How many vertices does each shape have?



2 Complete the table.

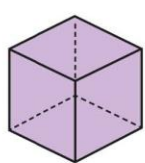
Shape	Name	Number of vertices
	cuboid	8
	pyramid	5
	cube	8
	cylinder	0

Write the name of a different 3D shape with no vertices.

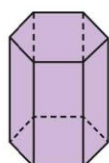
sphere

- 3 Write the shapes in order of the number of vertices.

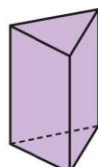
Start with the shape that has the fewest vertices.



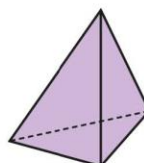
A



B



C



D

fewest

most

D C A B

- 4 Complete the sentences.

more

fewer

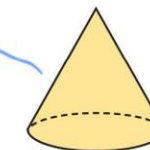
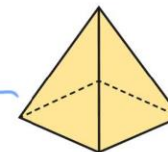
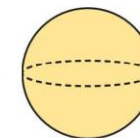
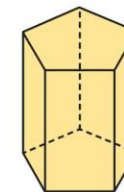
- a) A cube has more vertices than a sphere.
- b) A sphere has fewer vertices than a cone.
- c) A triangular prism has fewer vertices than a cuboid.

- 5 Match each shape to the correct label.

< 5 vertices

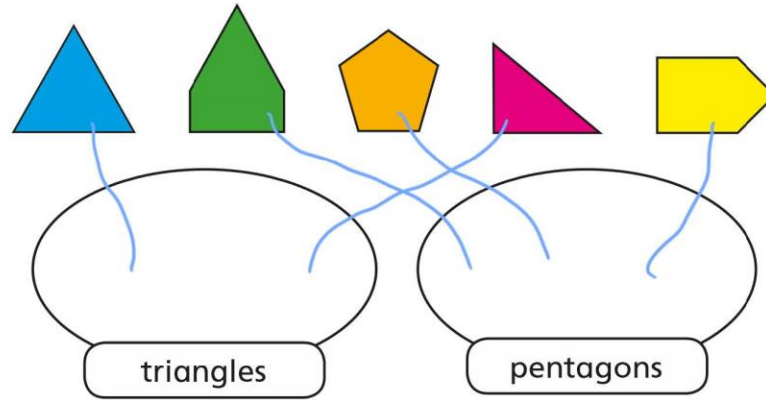
= 5 vertices

> 5 vertices

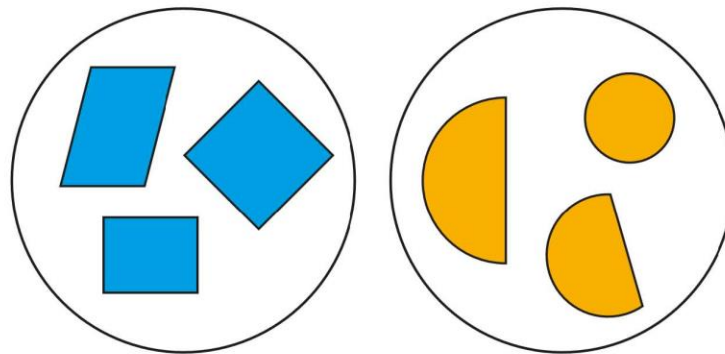


Sort 2D shapes

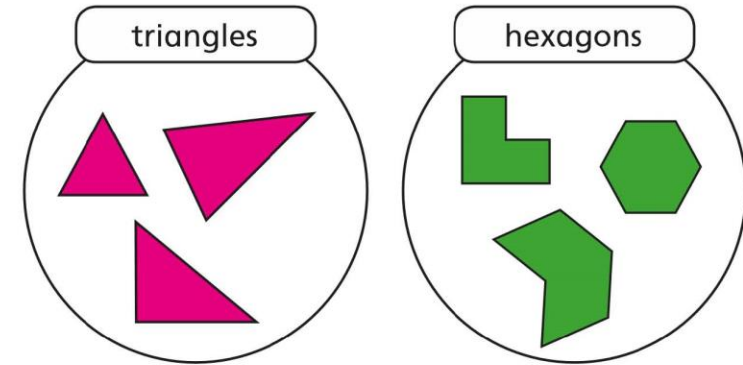
1 Draw lines to sort the shapes into groups.



2 How have the shapes been sorted?



3 Eva sorts some shapes.

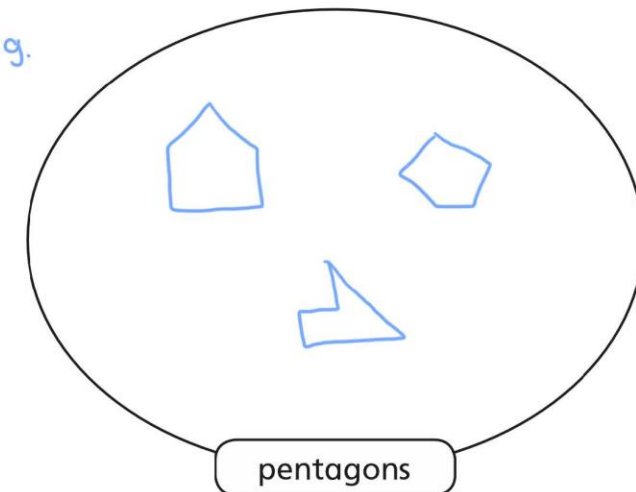


a) Is Eva correct? Yes

How do you know?

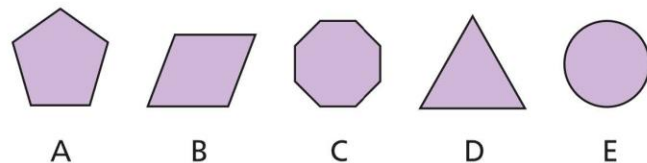
b) Draw a group of three different pentagons.

e.g.



- 4 a) Sort the shapes in order of the number of sides.

Start with the shape that has the fewest sides.



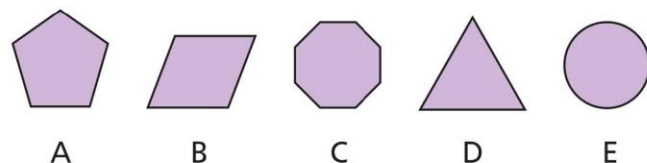
fewest

most

E D B A C

- b) Sort the shapes in order of the number of vertices.

Start with the shape that has the fewest vertices.



fewest

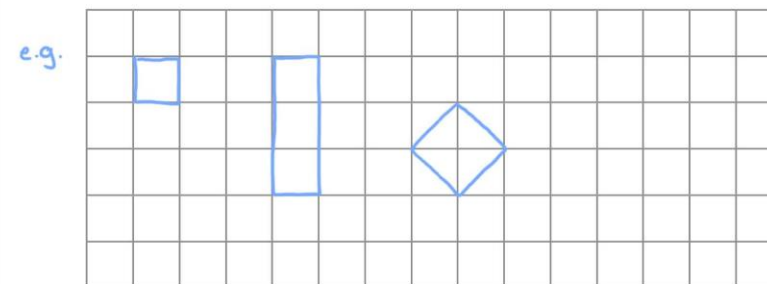
most

E D B A C

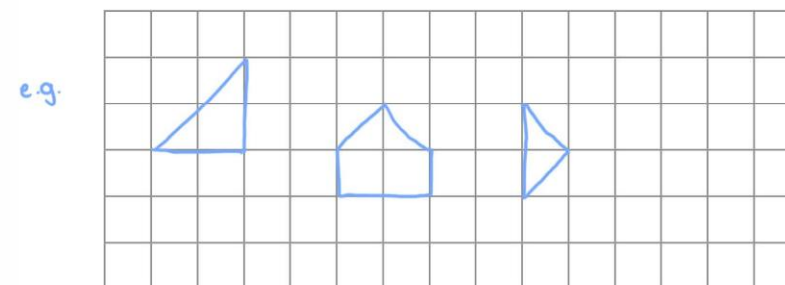
- c) What do you notice about your answers to part a) and part b)?

- 5 Draw three different shapes in each group.

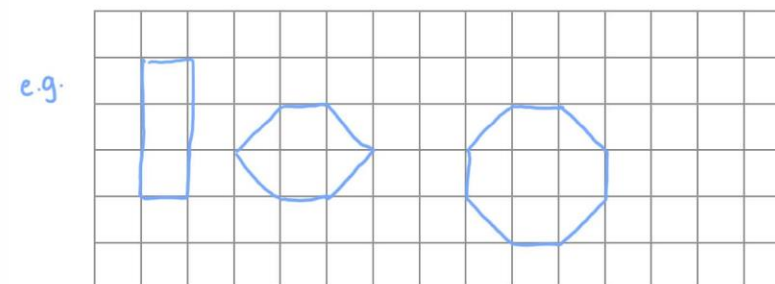
shapes with 4 sides



shapes with an odd number of vertices

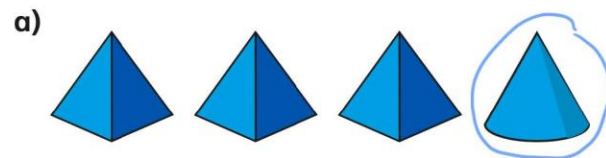


shapes with an even number of sides

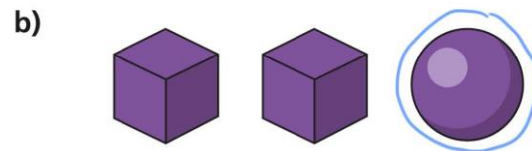


Sort 3D shapes

- 1 Circle the odd one out in each group and complete the sentences.



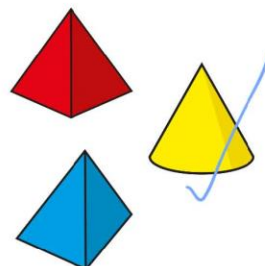
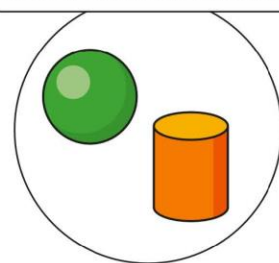
The odd one out is a cone.



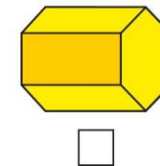
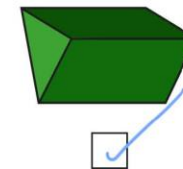
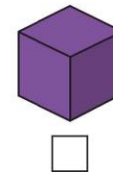
The odd one out is a sphere.

- 2 Tick the shape that could go in the group.

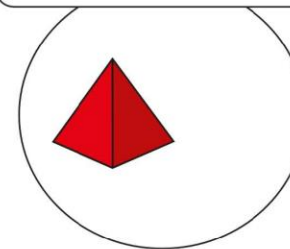
has a curved surface



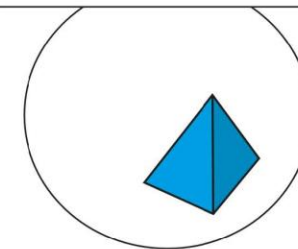
- 3 Tick the shape that could go in both groups.



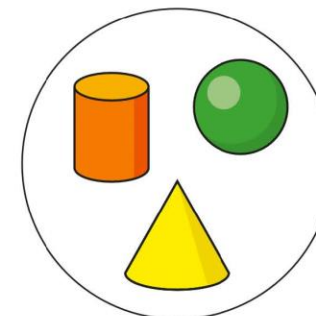
odd number of faces



even number of vertices

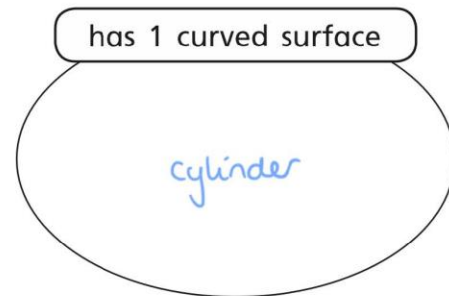
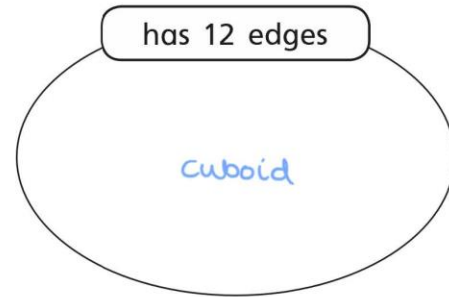
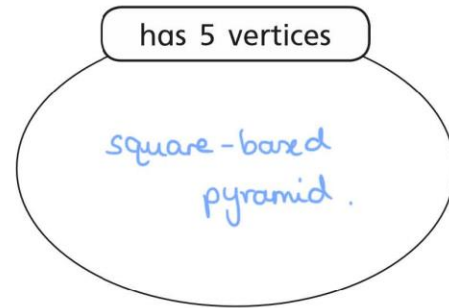


- 4 How have the shapes been grouped?



- 5 Write the name of a 3D shape that could go in each group.

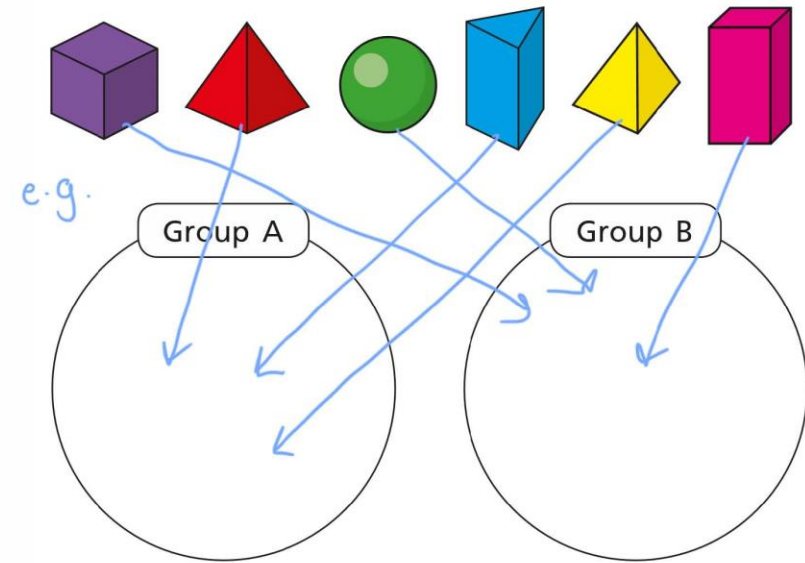
e.g.



Can you think of any other shapes to go in each group?



- 6 a) Draw lines to sort the shapes into two groups.



- b) Give each of your groups a label.

Group A: Has at least one triangular face

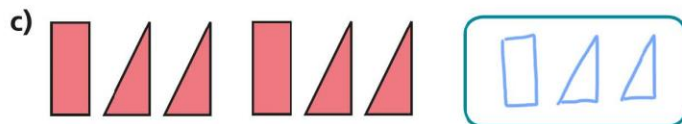
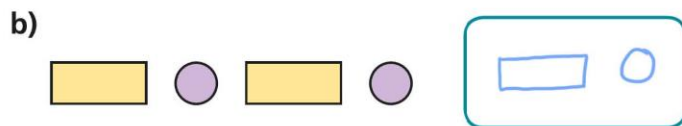
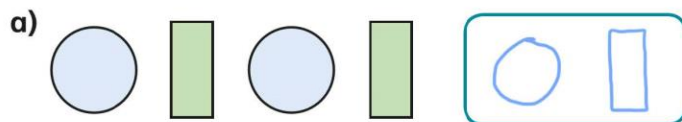
Group B: Has no triangular faces

Compare answers with a partner.

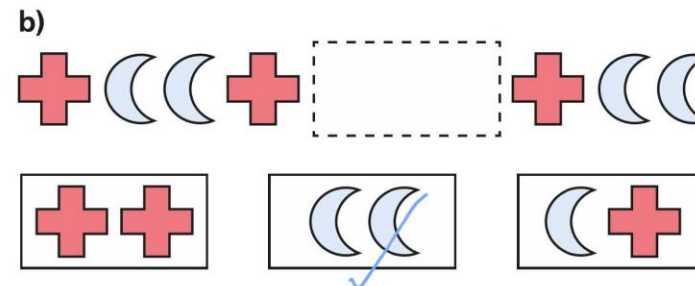
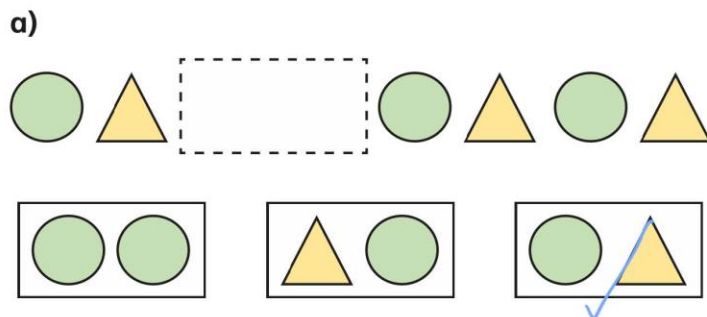


Make patterns with 2D shapes

1 Draw the next two shapes in each pattern.



2 Tick the shapes that fit in each pattern.

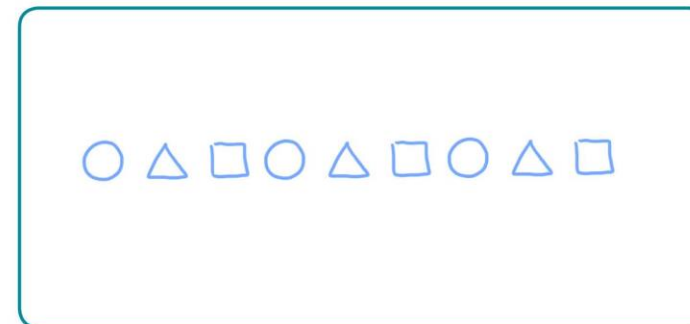


3



My pattern goes:
circle, triangle, square,
then it repeats.

a) Draw the first 9 shapes in Rosie's pattern.



b) What is the name of the 10th shape in the pattern?

circle

c) What is the name of the shape to the right of the 5th shape?

square

- 4 Mo makes a pattern using 4 rectangles, 4 triangles and 4 circles.

What could Mo's pattern be?

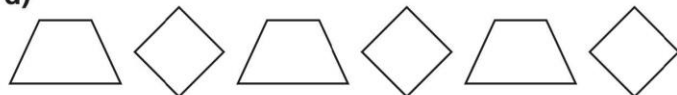
Draw two different possibilities.

e.g.



- 5 Draw the 10th shape for each pattern.

a)



b)



- 6 Write your own repeating pattern of shapes.

For example: circle, rectangle, rectangle, circle, rectangle, rectangle ...

Various answers.

_____, _____, _____, _____,
_____, _____, _____, _____.

Swap with a partner and draw each other's patterns.

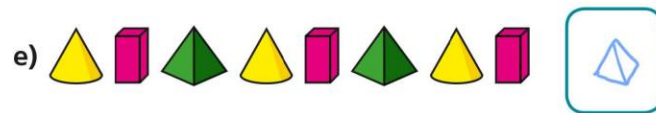
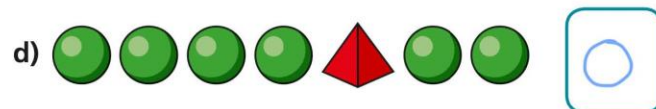
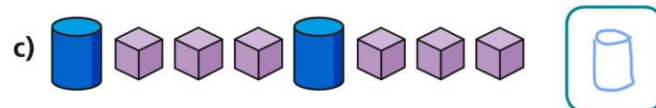
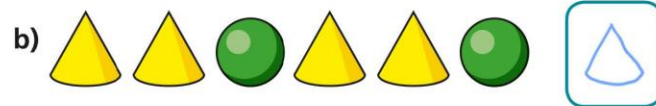
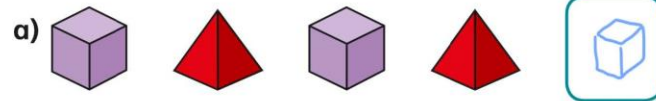
- 7 Draw a shape in each box to make a repeating pattern.

You may want to practise on a whiteboard.

e.g.

Make patterns with 3D shapes

1 Draw the next shape in each pattern.

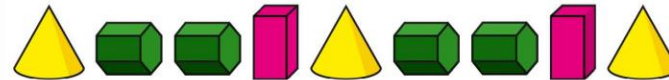


2 What is the name of the 3rd shape in the pattern?



pyramid

3 Here is a pattern made with 3D shapes.



a) Write the name of the 4th shape in the pattern.

cuboid

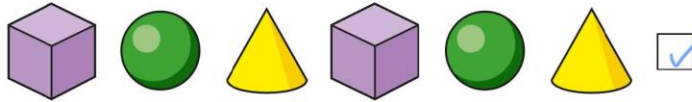
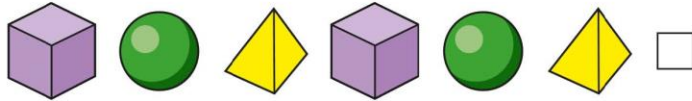
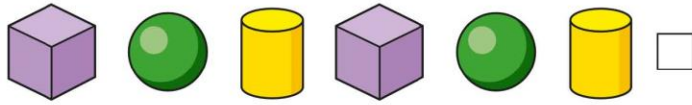
b) What would the 13th shape in the pattern be?

cone

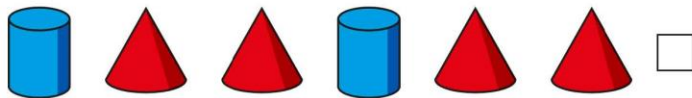
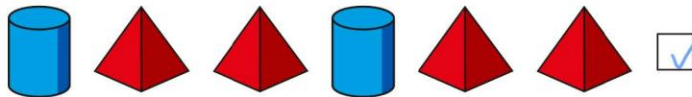


4 Tick the row that shows the pattern.

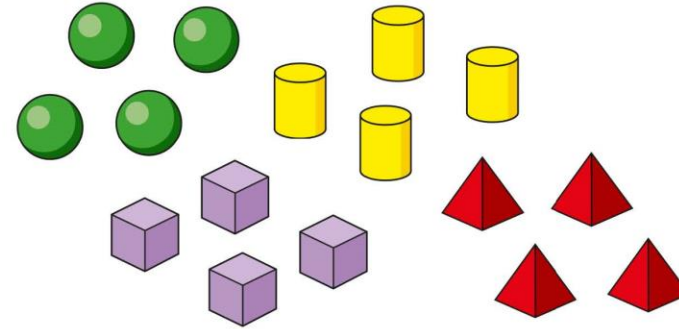
a) cube, sphere, cone, cube, sphere, cone



b) cylinder, pyramid, pyramid, cylinder, pyramid, pyramid



5 Eva is making a pattern using these shapes.



various answers.

a) What pattern could Eva make?

b) Can you arrange Eva's shapes to make a symmetrical pattern?

c) Compare answers with a partner.

