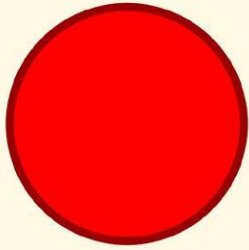
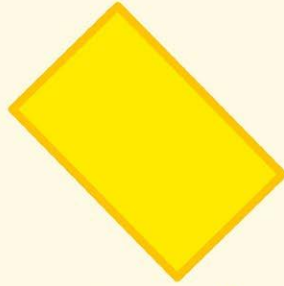


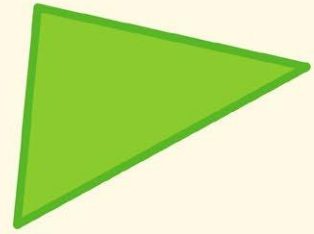
# Regular and Irregular 2D Shapes in Different Orientations



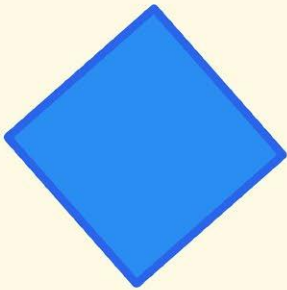
circle



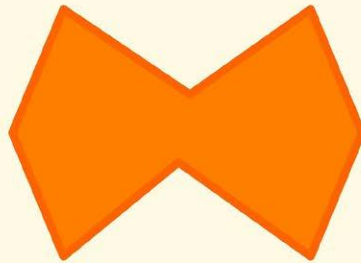
rectangle



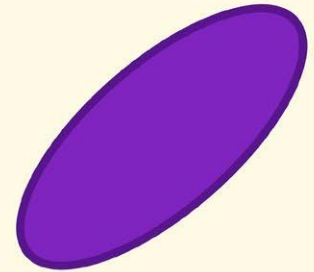
triangle



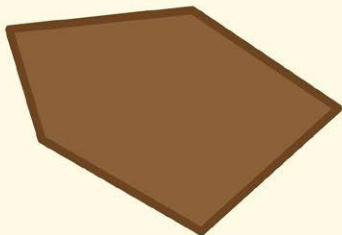
square



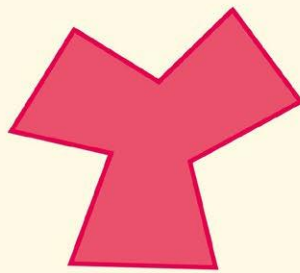
octagon



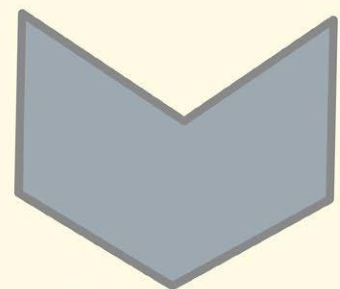
oval



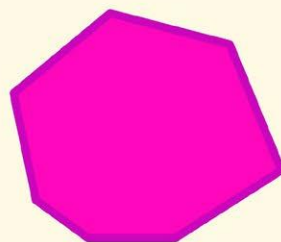
pentagon



nonagon



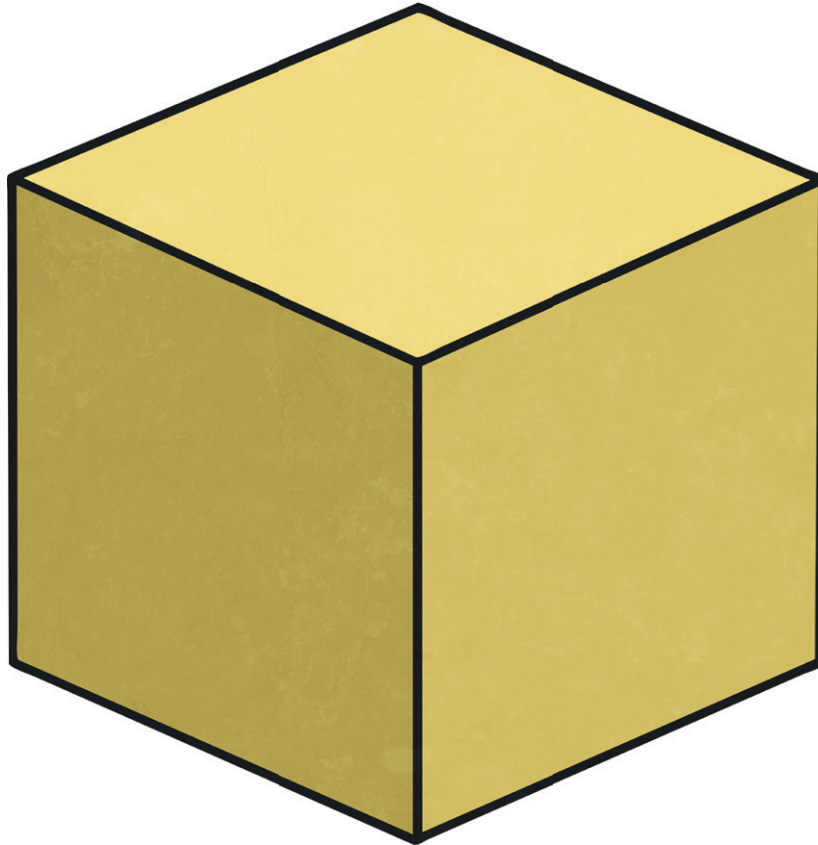
hexagon



heptagon



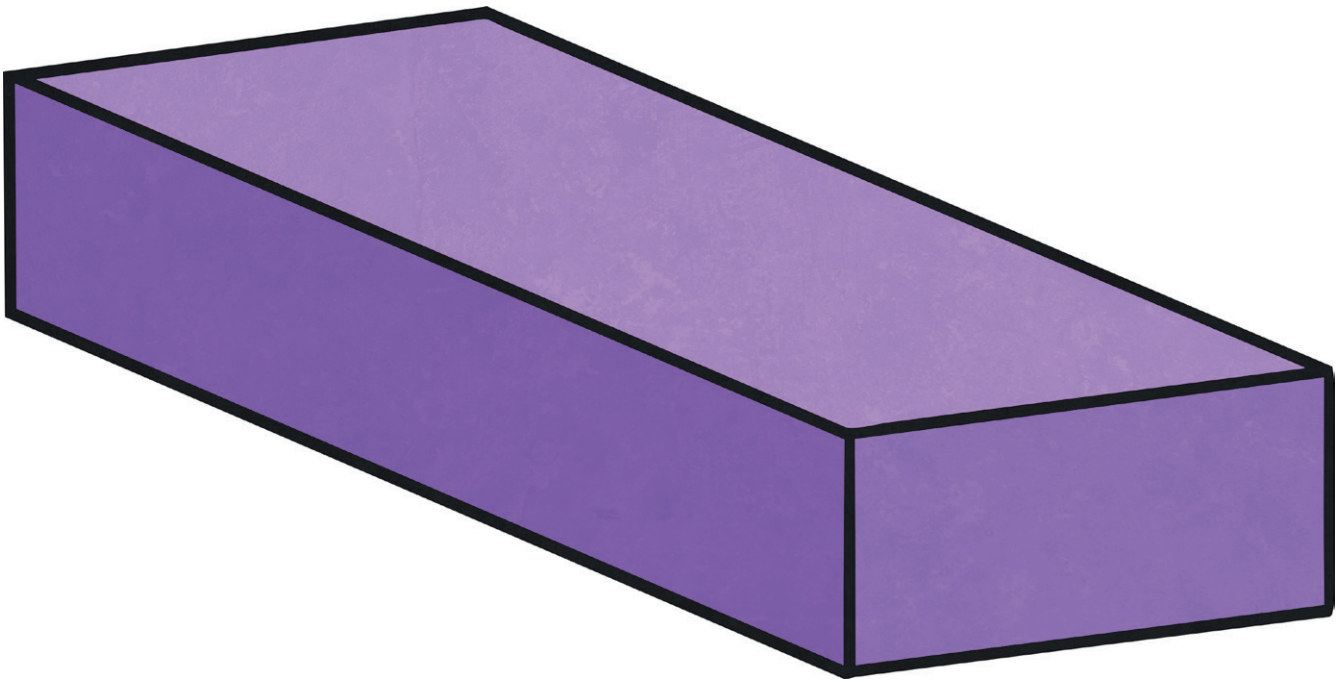
# Cube



Cubes have:

- 6 faces;
- 12 edges;
- 8 vertices;
- edges that are all the same length.

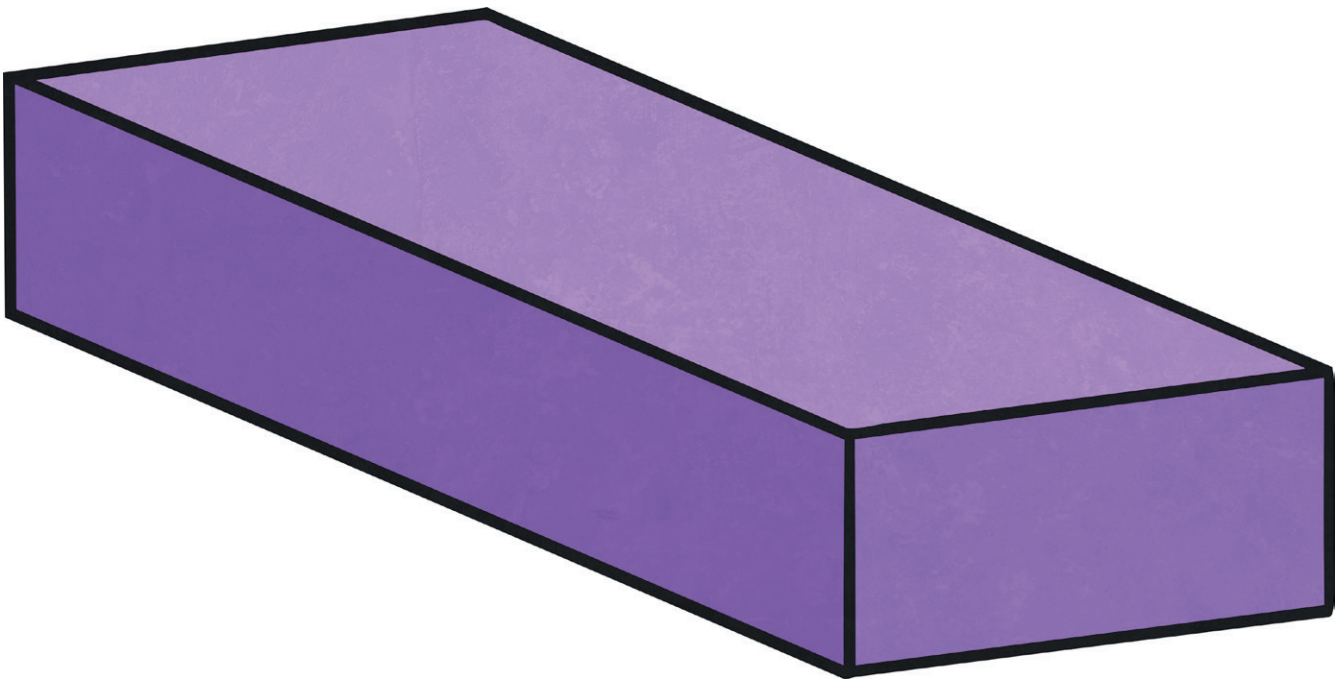
# Cuboid



Cuboids have:

- 6 faces;
- 12 edges;
- 8 vertices;
- edges that are **not** all the same length.

# Rectangular Prism

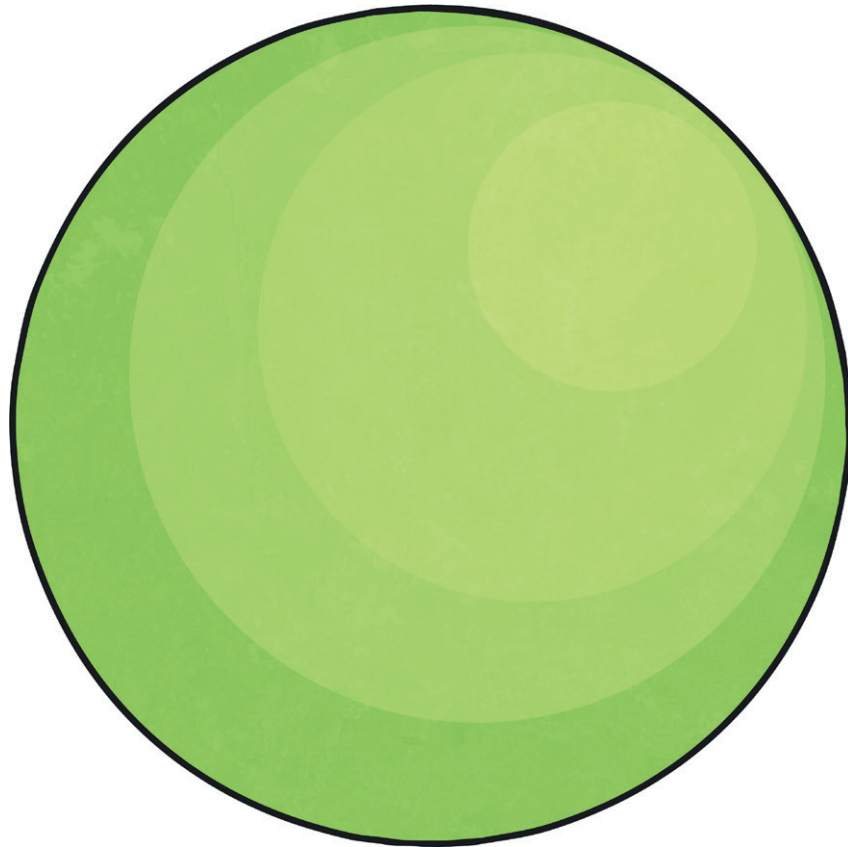


Rectangular prisms have:

- 6 faces;
- 12 edges;
- 8 vertices;
- edges that are **not** all the same length.



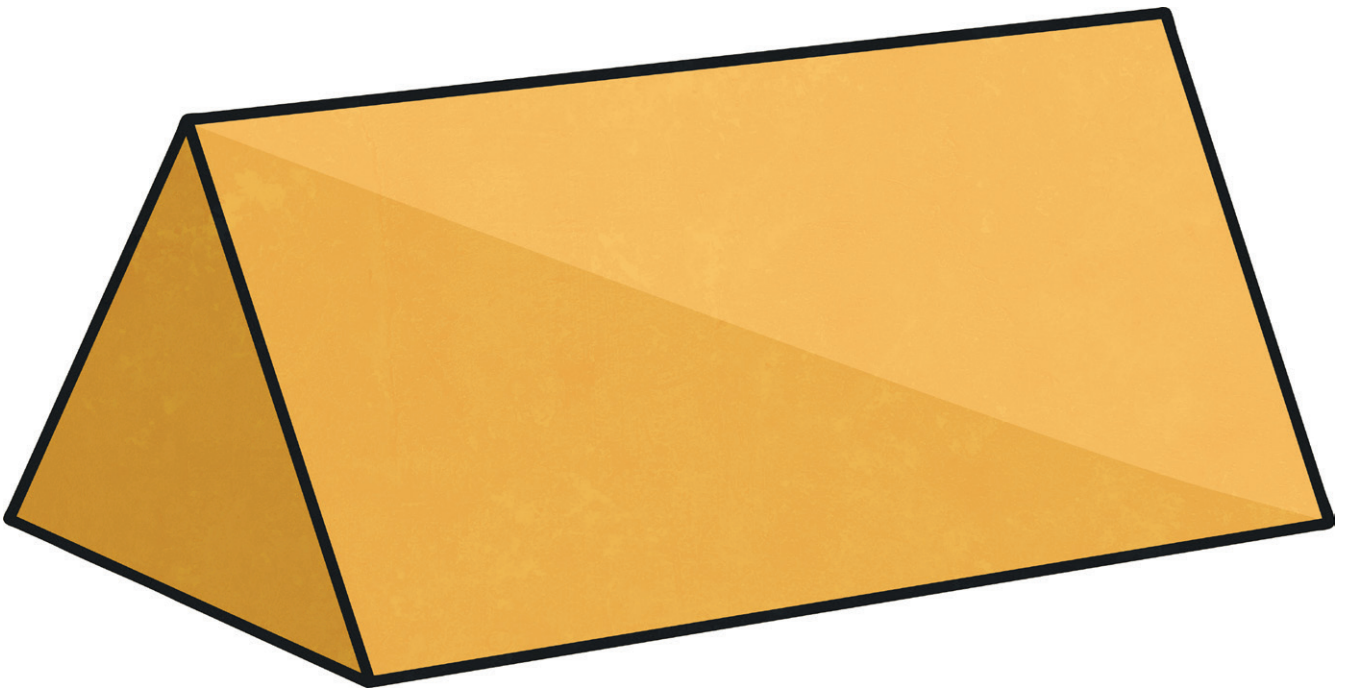
# Sphere



Spheres:

- are perfectly round;
- have no edges;
- have no vertices.

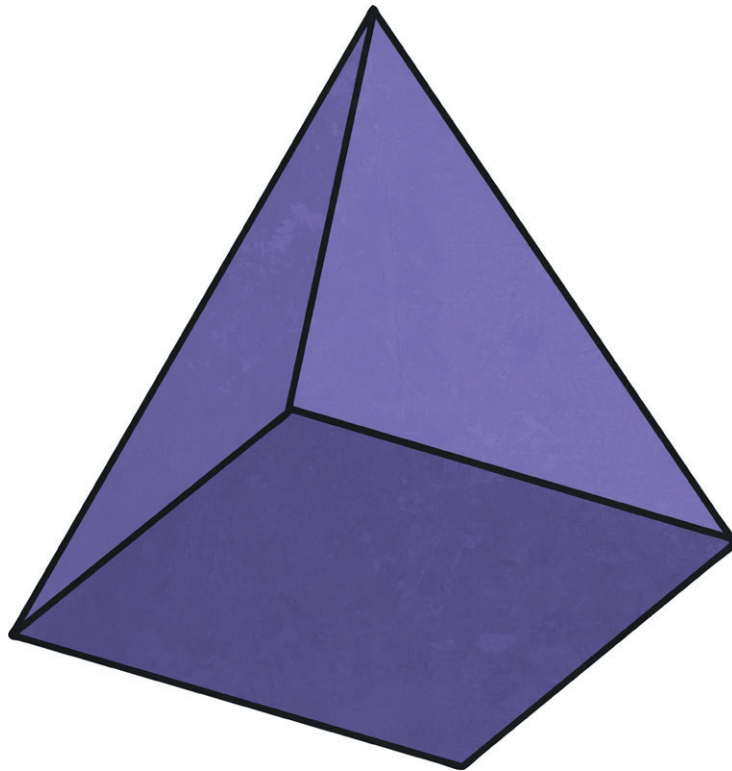
# Triangular Prism



Triangular prisms have:

- 5 faces;
- 2 triangular faces;
- 3 rectangular faces.

# Square-Based Pyramid



Square-based pyramids have:

- a square base;
- 4 triangular faces that make a sharp point;
- 5 faces.

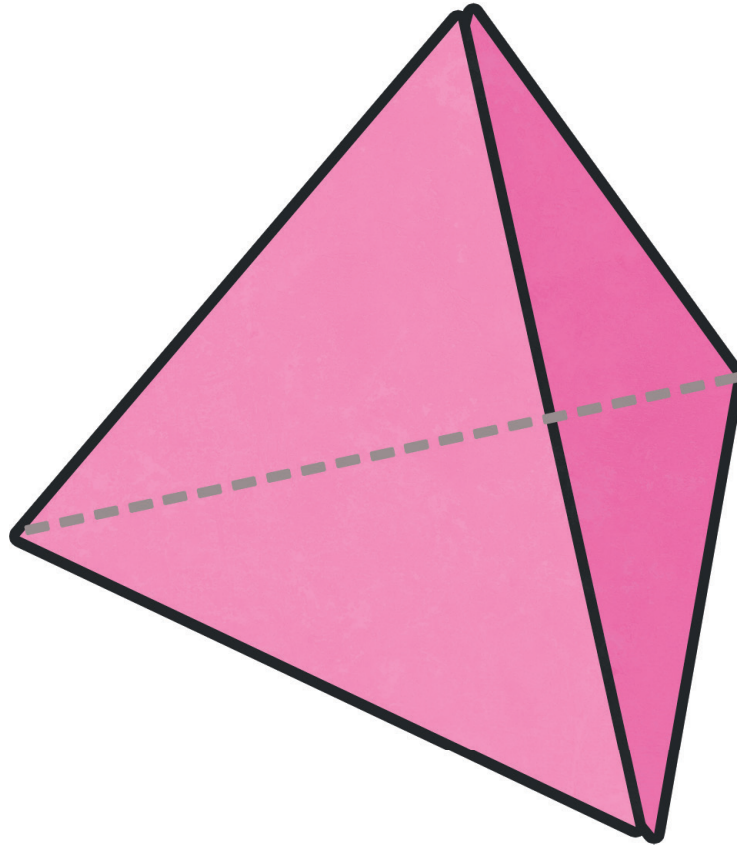
# Cylinder



Cylinders have:

- 2 flat and circular faces;
- 1 curved face;
- **no** vertices.

# Tetrahedron

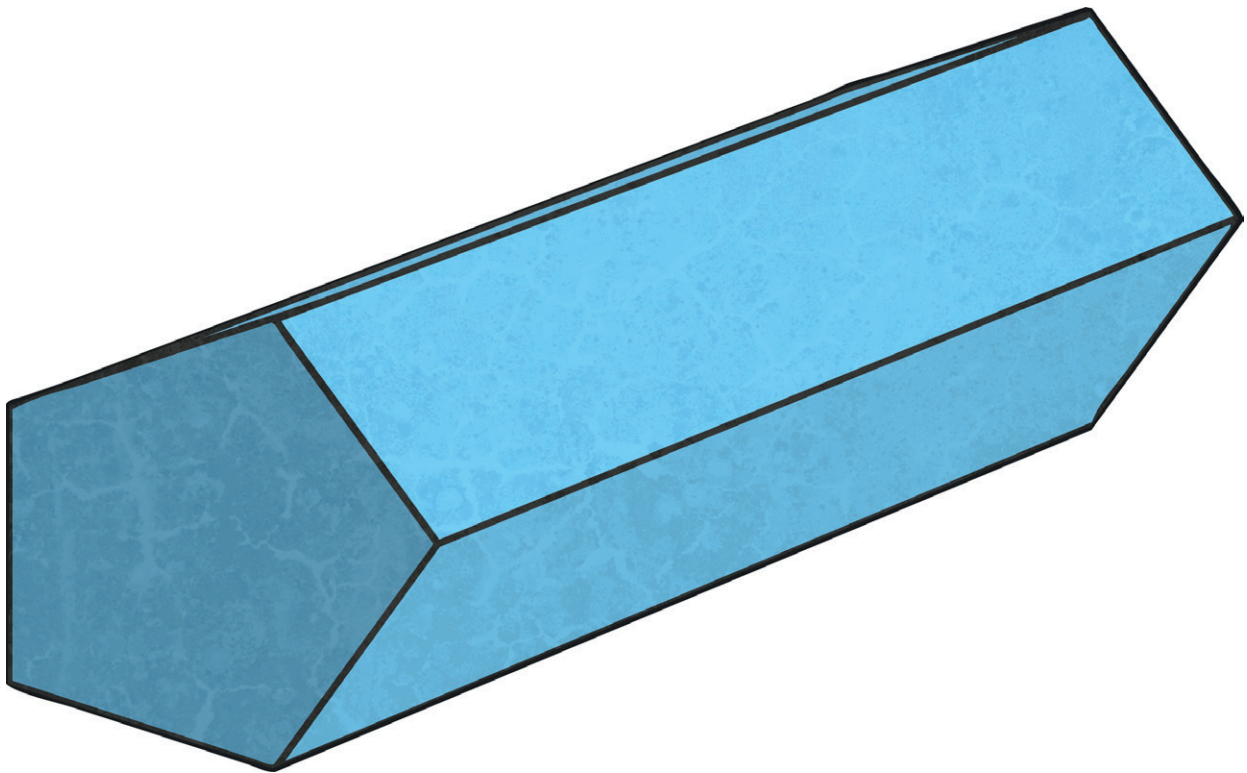


Tetrahedra have:

- 4 flat and triangular faces;
- 4 vertices;
- 6 edges.



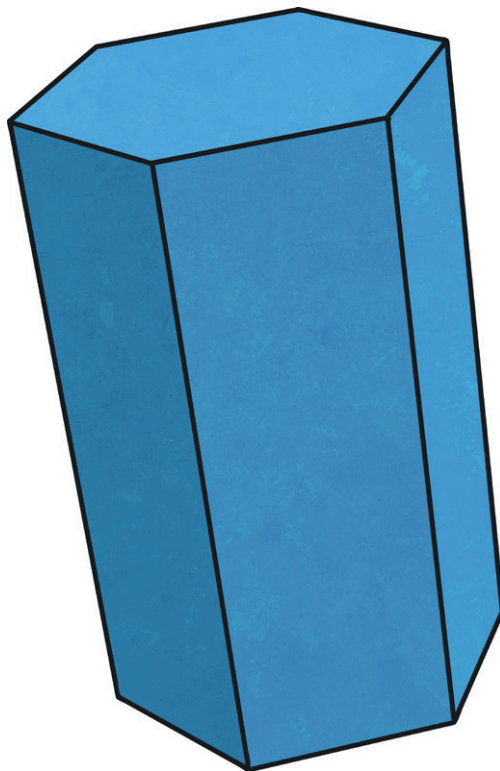
# Pentagonal Prism



Pentagonal prisms have:

- 7 faces;
- 2 pentagonal faces;
- 5 rectangular faces;
- 15 edges;
- 10 vertices.

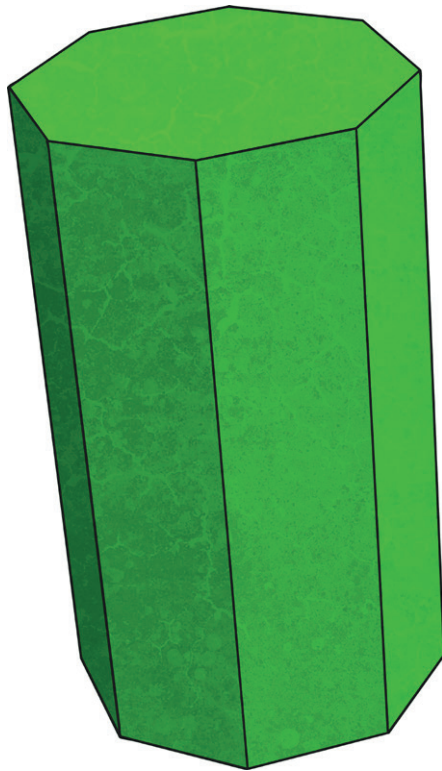
# Hexagonal Prism



Hexagonal prisms have:

- 8 faces;
- 2 hexagonal faces;
- 6 rectangular faces;
- 18 edges;
- 12 vertices.

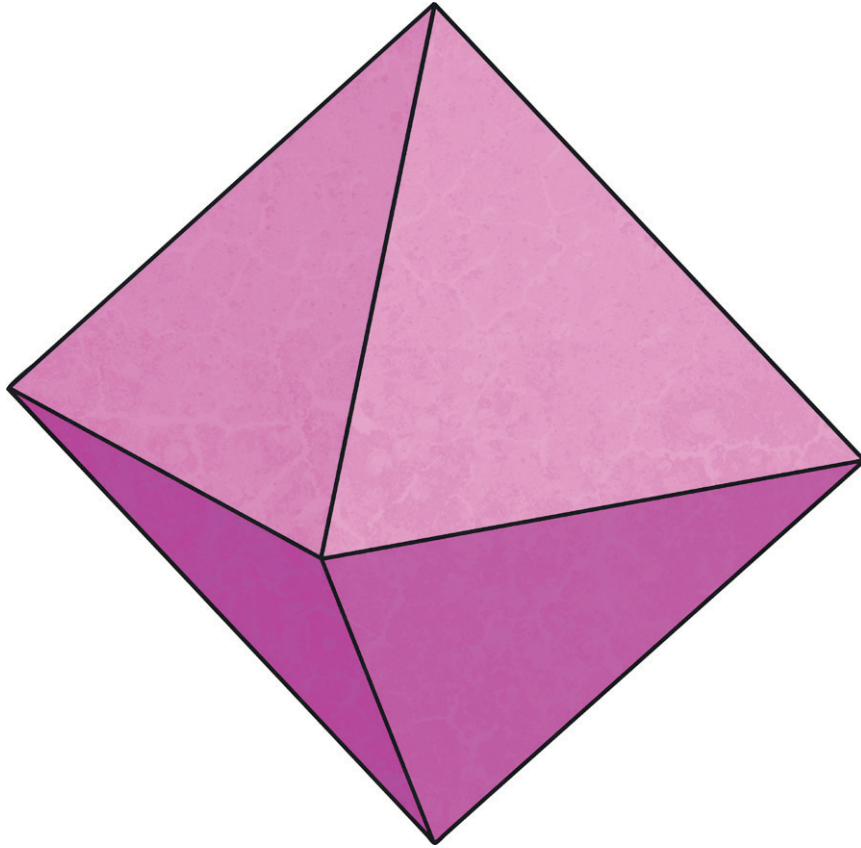
# Octagonal Prism



Octagonal prisms have:

- 10 faces;
- 2 octagonal faces;
- 8 rectangular faces;
- 24 edges;
- 16 vertices.

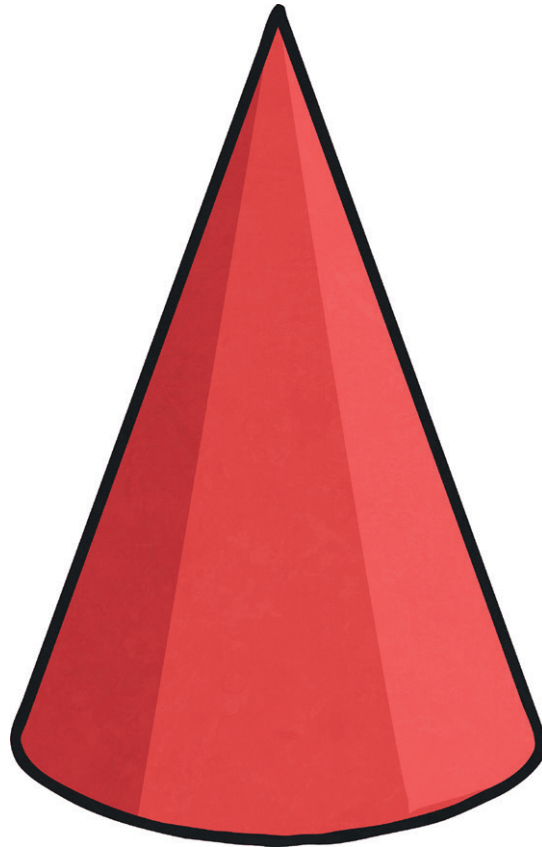
# Octahedron



Octahedra have:

- 8 triangular faces;
- 12 edges;
- 6 vertices.

# Cone

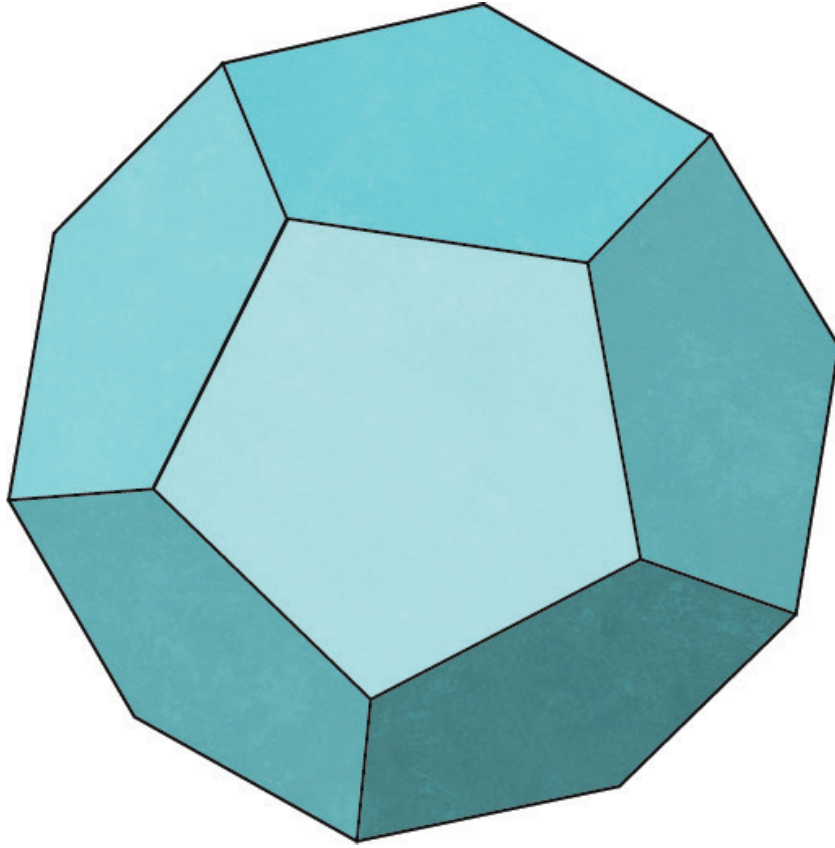


Cones have:

- 1 flat face which is a circle;
- 1 curved face;
- 1 edge.

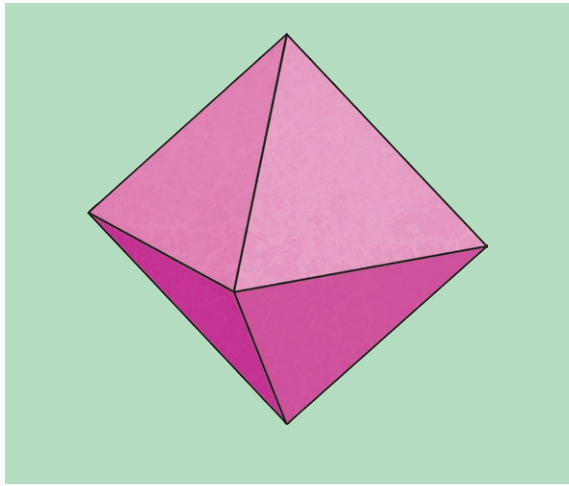


# Dodecahedron

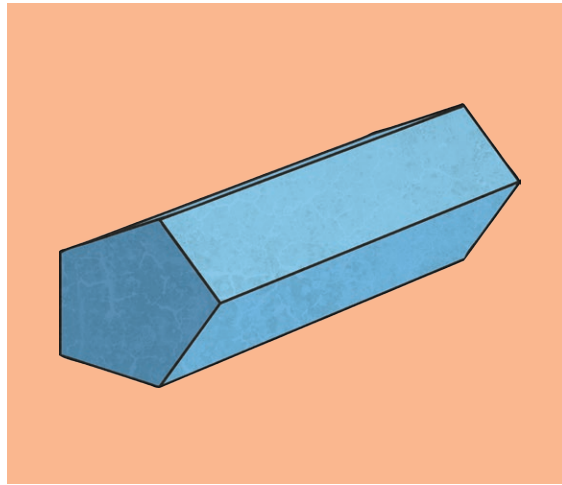


Dodecahedra have:

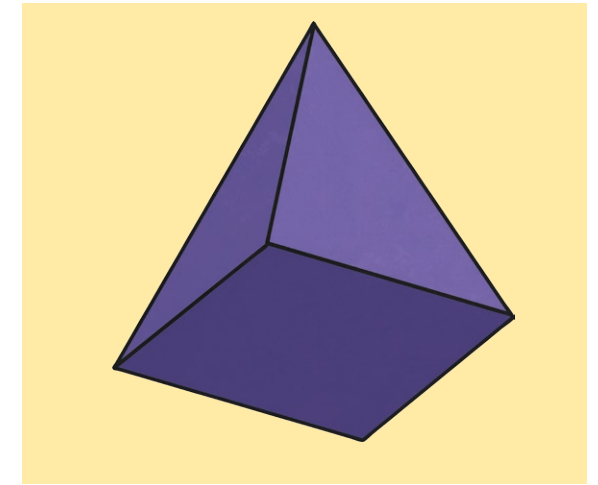
- 12 faces;
- 30 edges;
- 20 vertices.



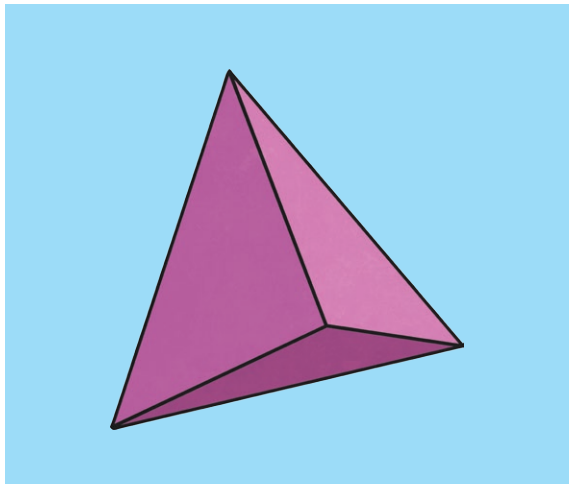
**Octahedron**



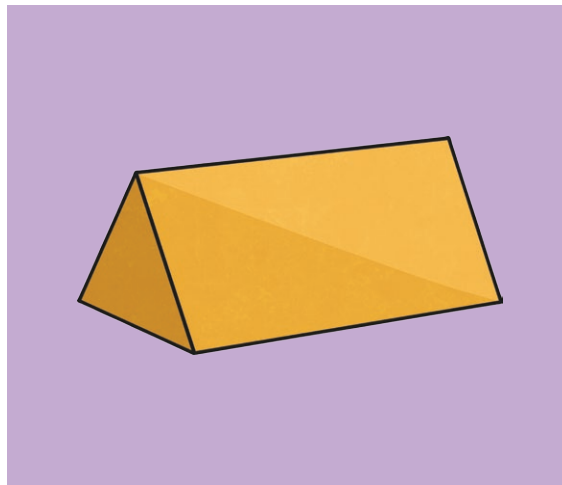
**Pentagonal Prism**



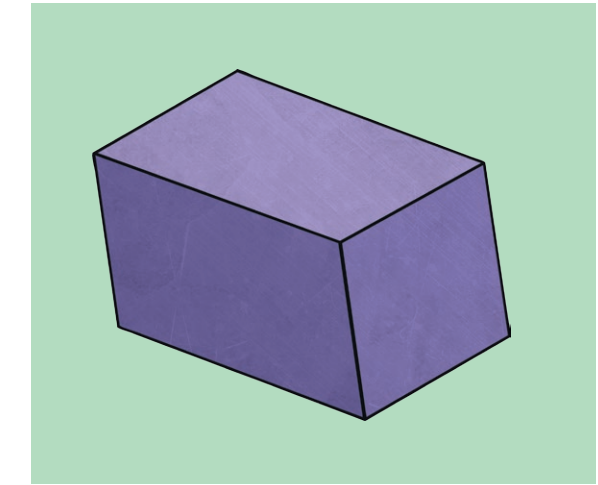
**Square-based  
Pyramid**



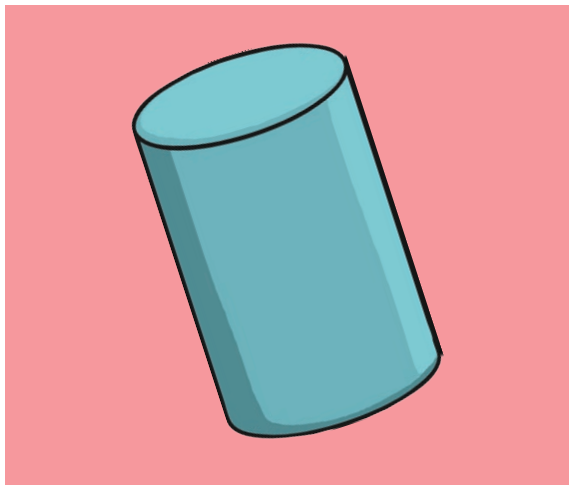
**Tetrahedron**



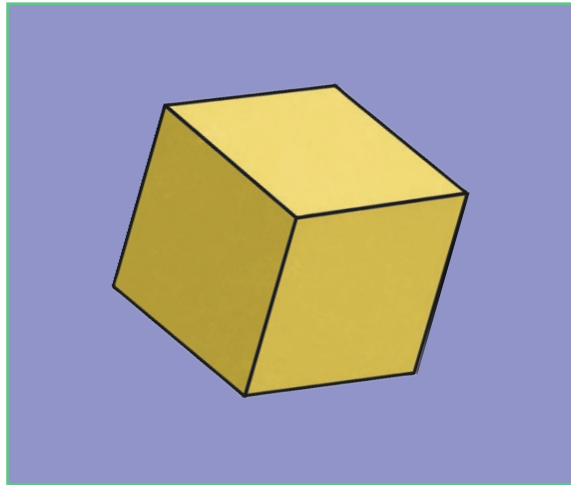
**Triangular Prism**



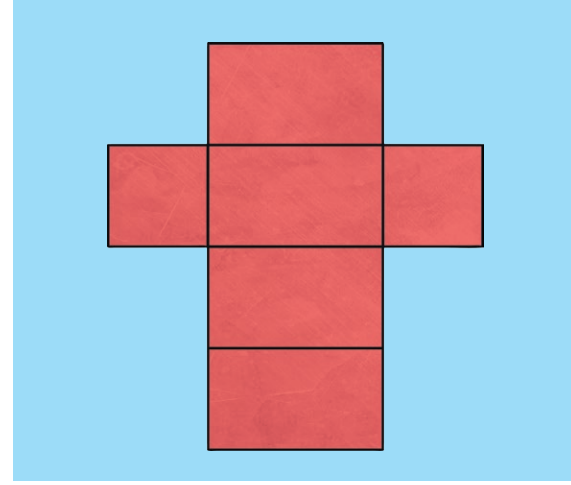
**Cuboid**



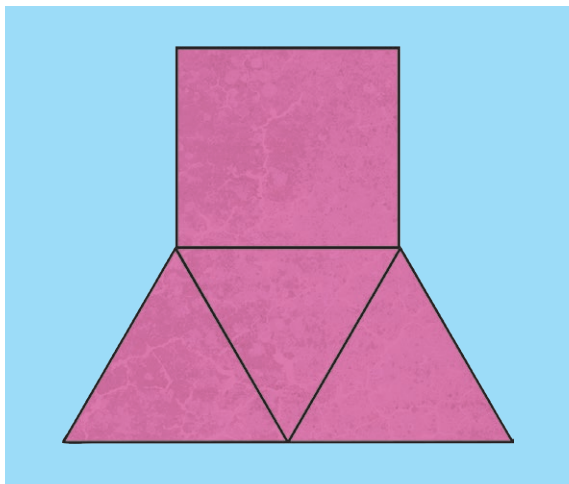
**Cylinder**



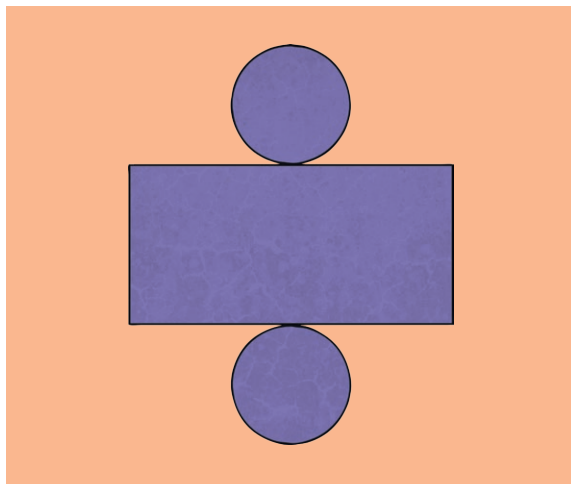
**Cube**



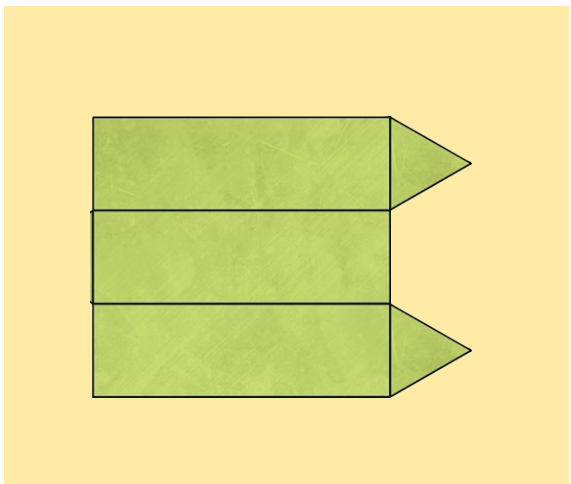
**A**



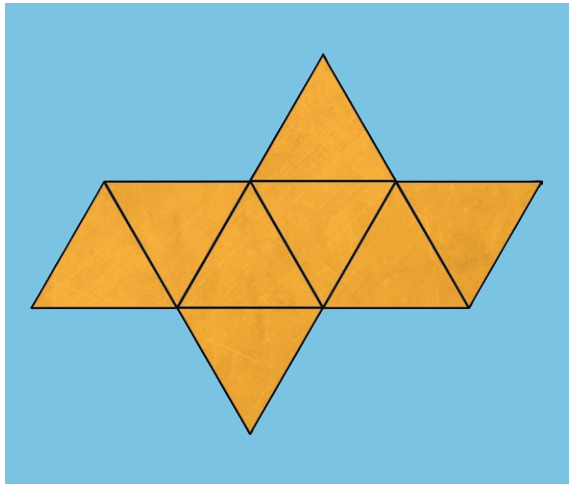
**B**



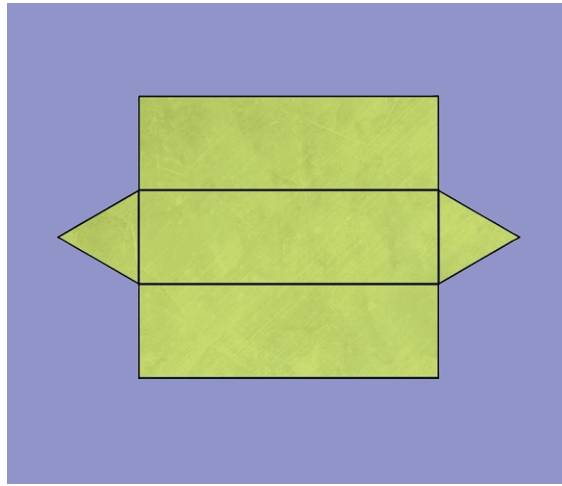
**C**



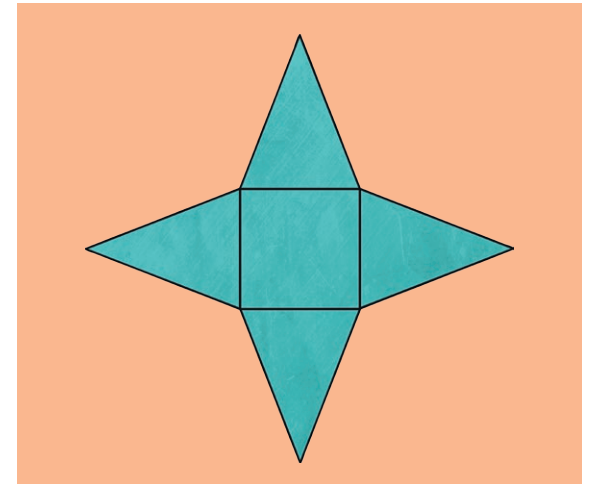
**D**



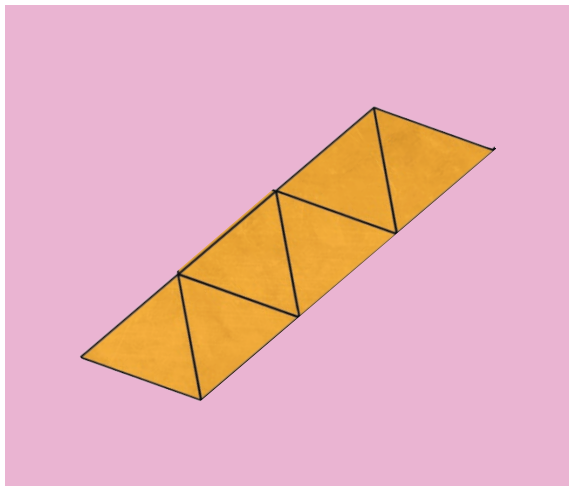
E



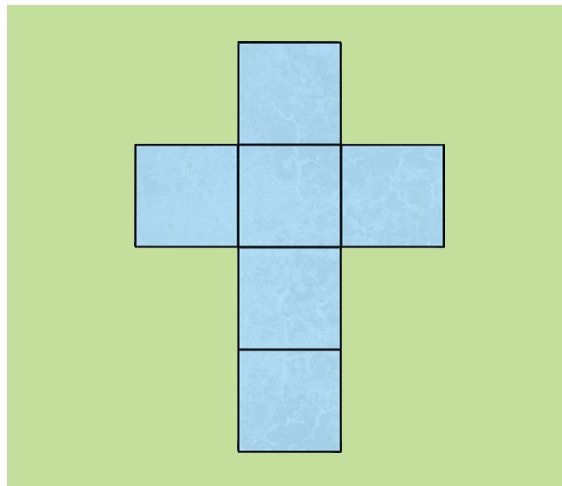
F



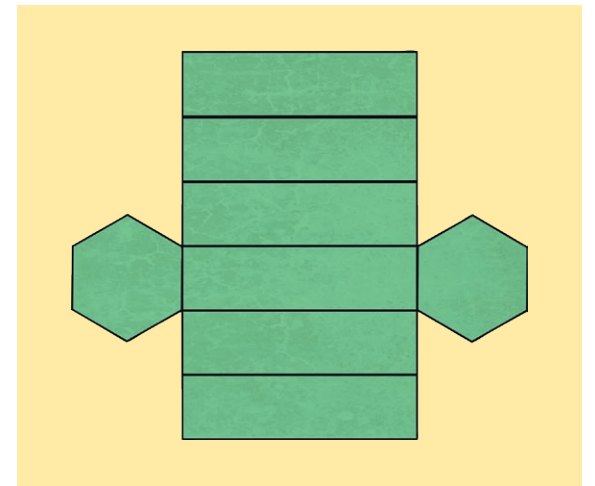
G



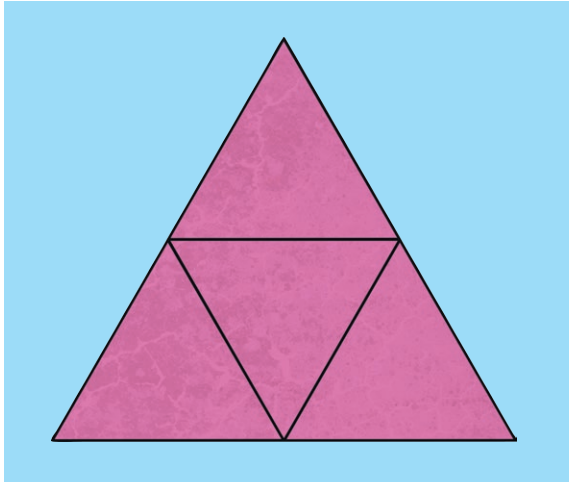
H



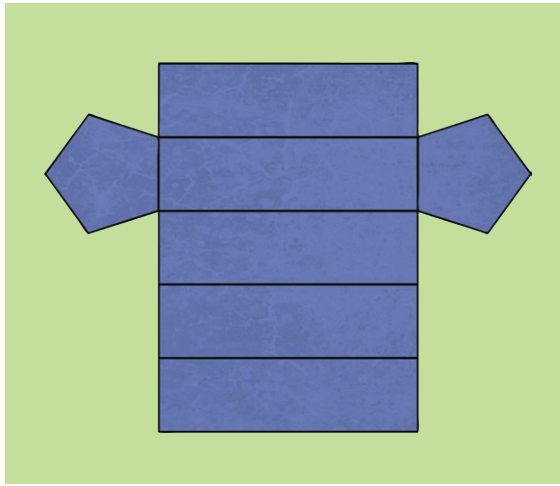
I



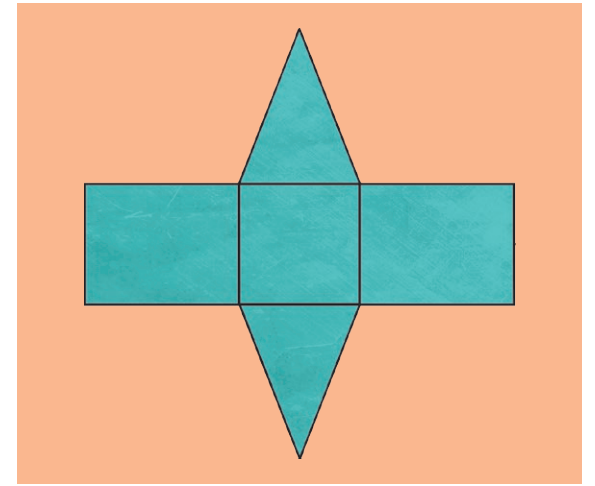
J



K



L



M



# Types of Line

verticals



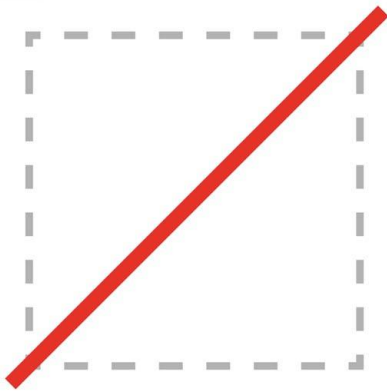
Straight line up and down

horizontal



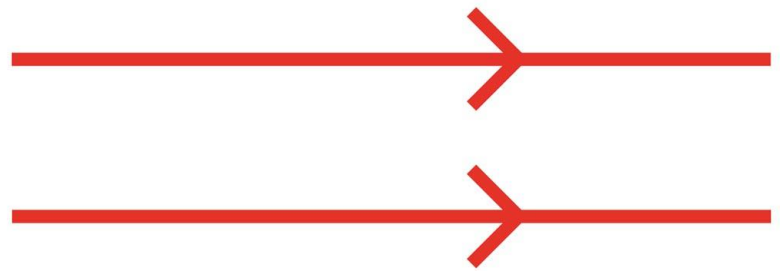
Straight line left and right

diagonal



Straight line corner to corner

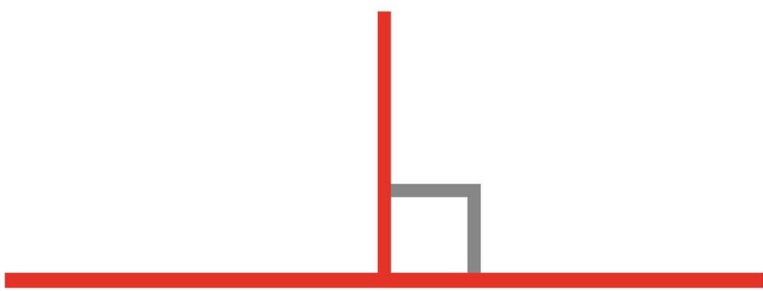
parallel



Lines that will never meet

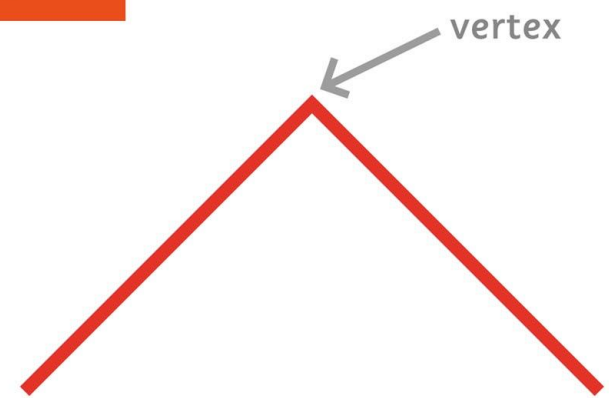
Regent Studies | [www.regentstudies.com](http://www.regentstudies.com)

perpendicular



At a right angle (90°)

vertex



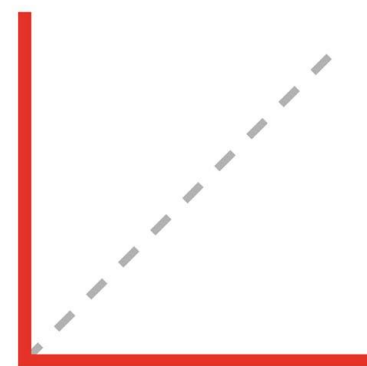
The highest point, corner, angle

arc



Part of the circumference of a circle

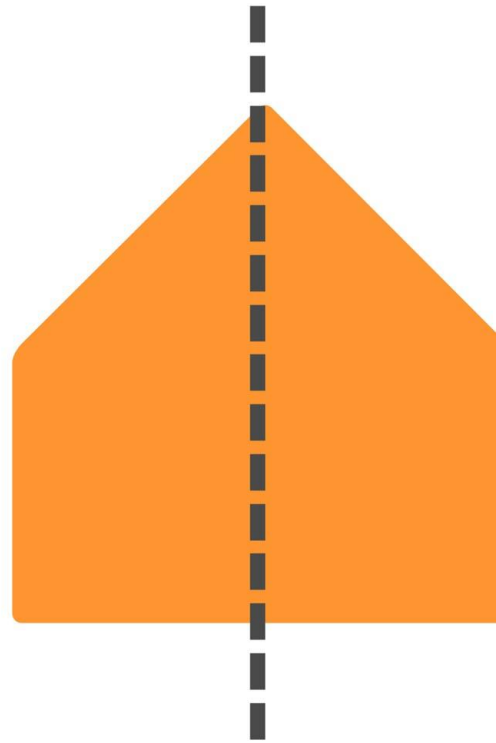
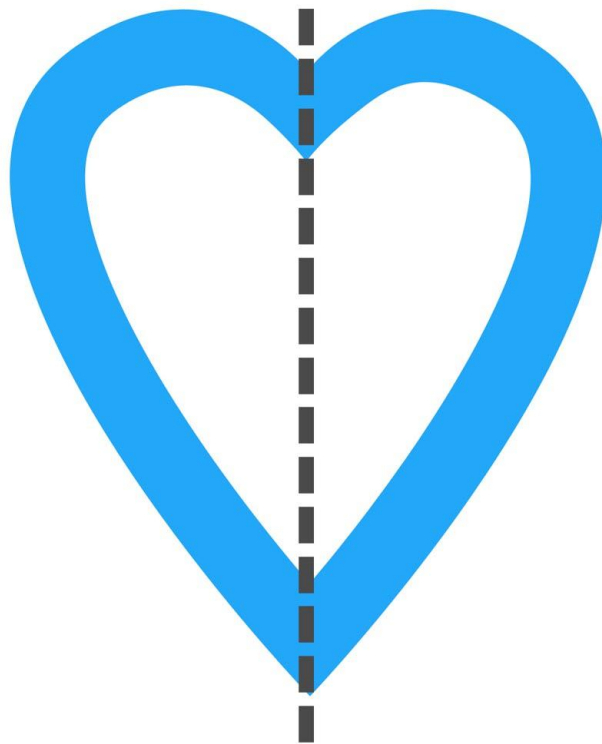
bisect



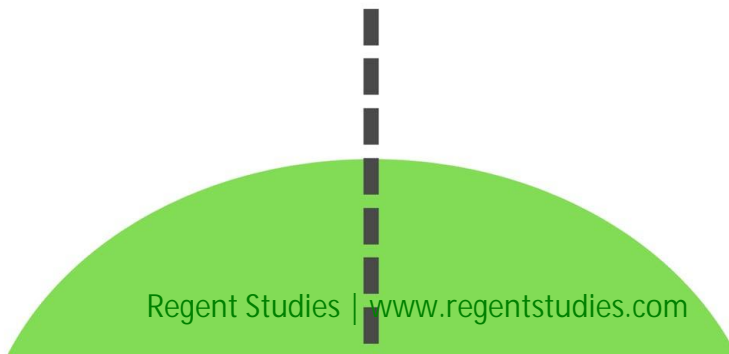
To cut in half

# LINES OF SYMMETRY

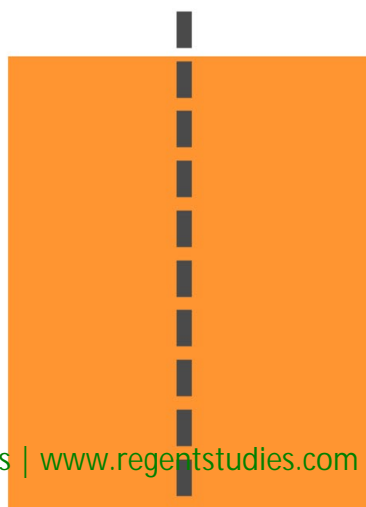
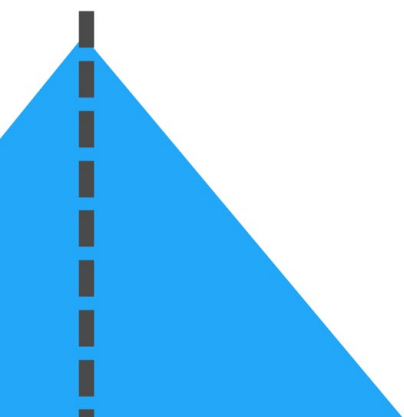
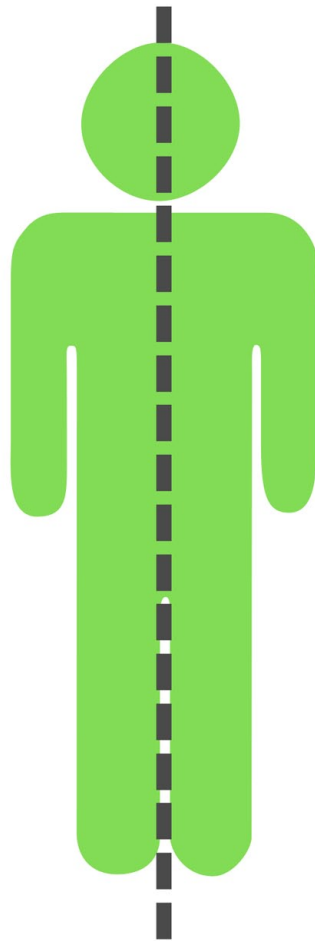
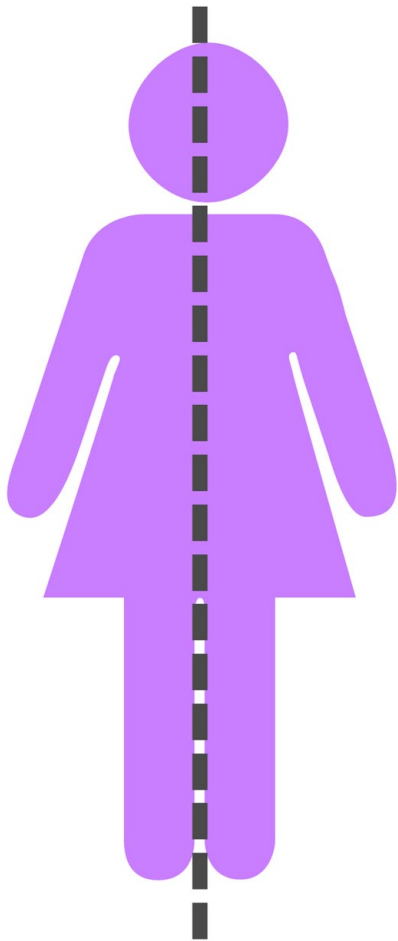
## 1 LINE OF SYMMETRY

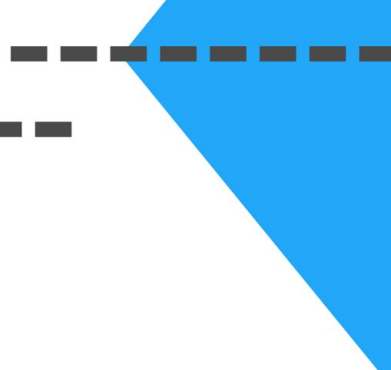
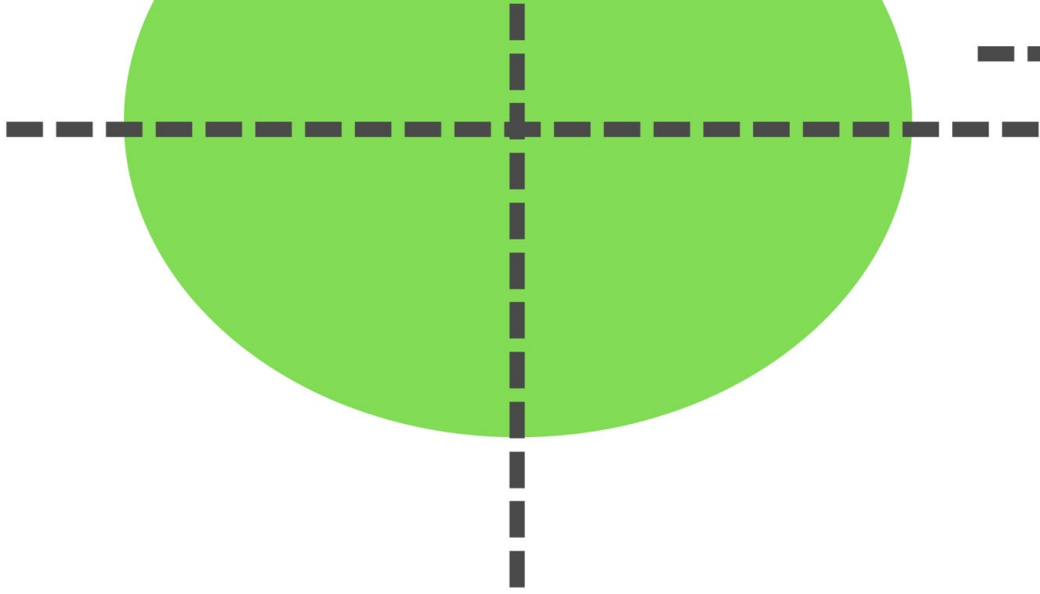


## 2 LINES OF SYMMETRY

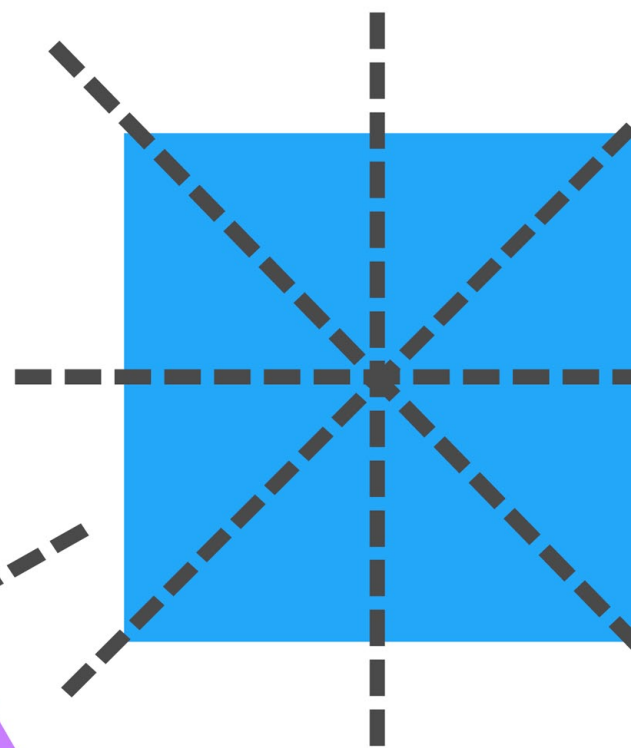
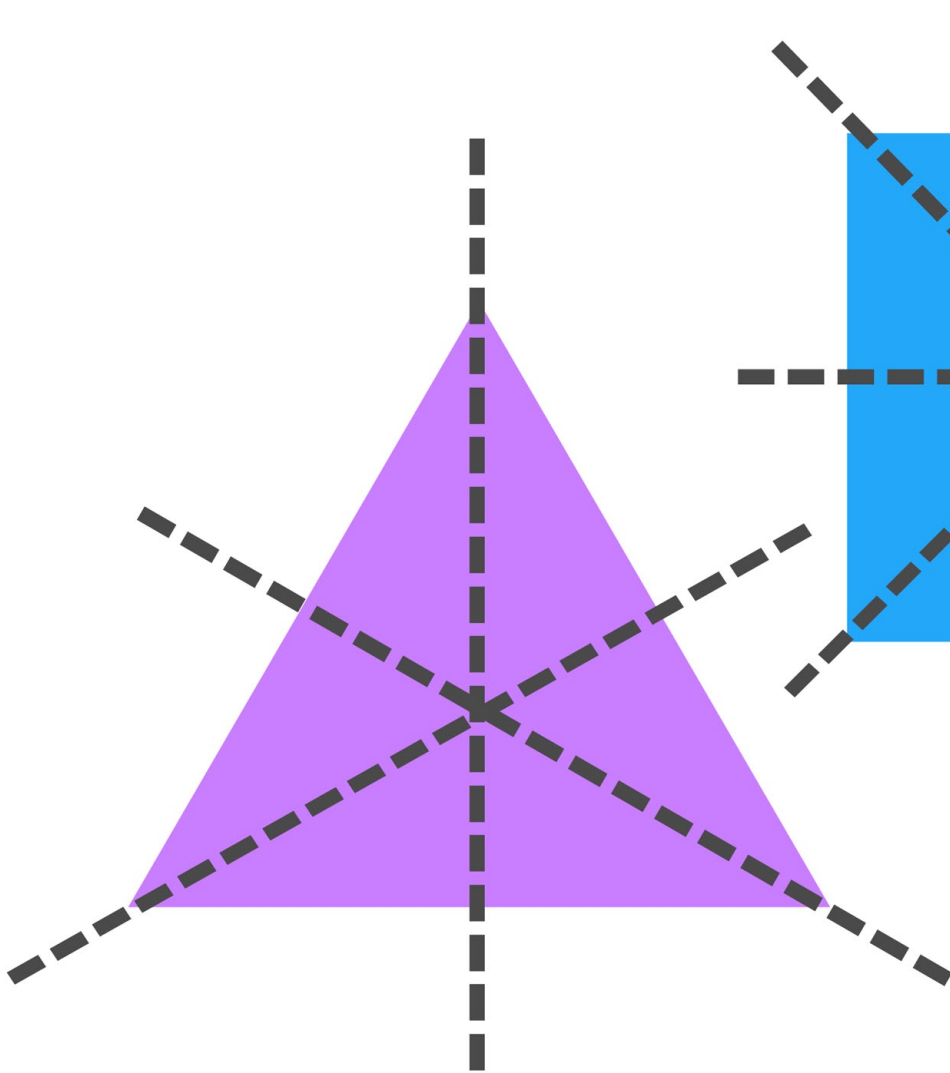


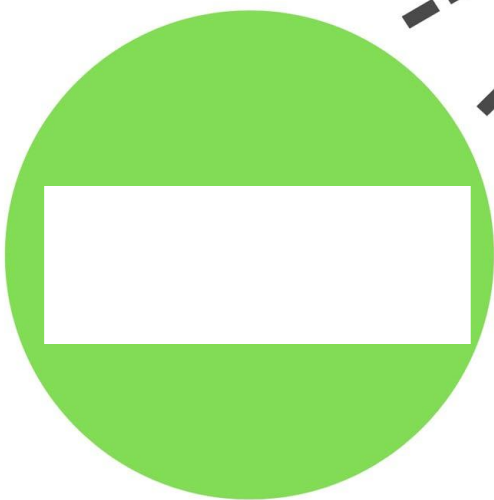
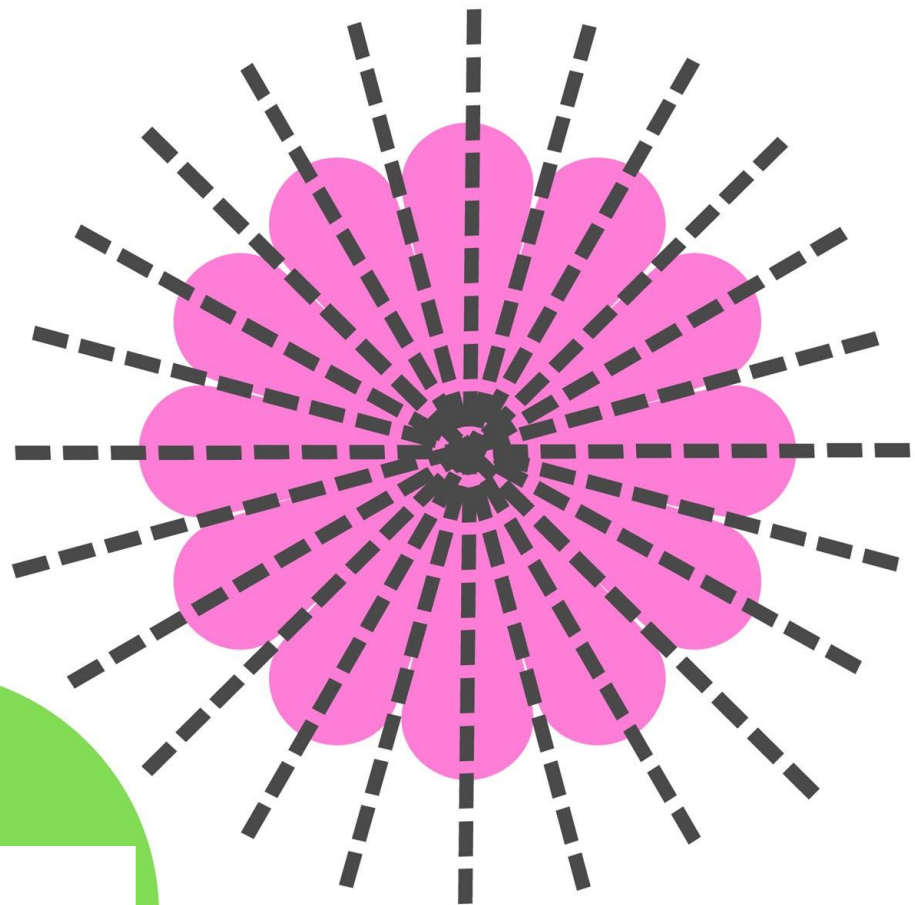
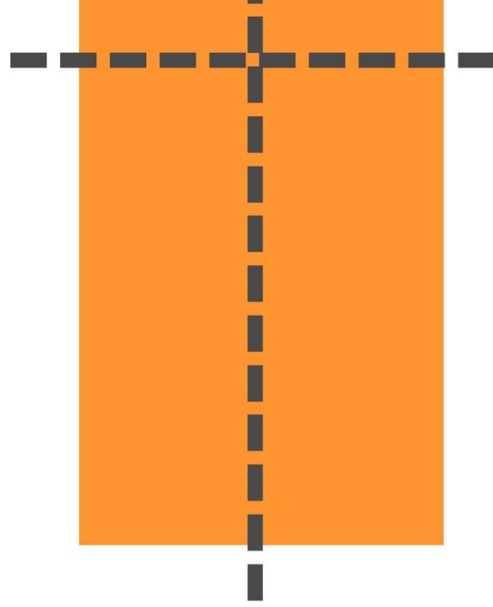
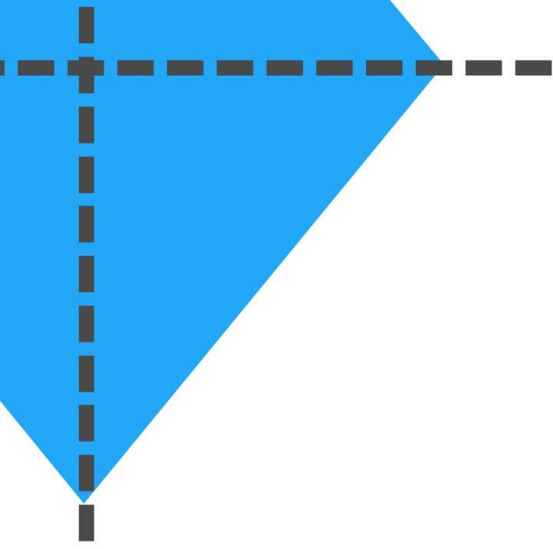
# SYMMETRY





# 3 LINES OF SYMMETRY OR MORE



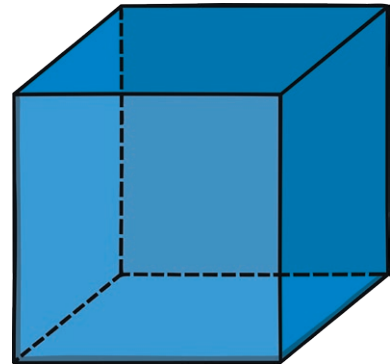




**2D shape**

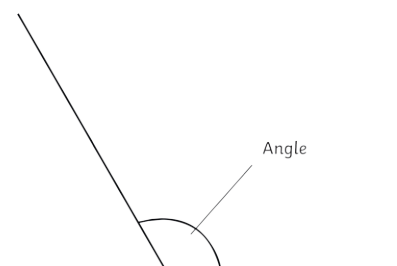


**3D shape**



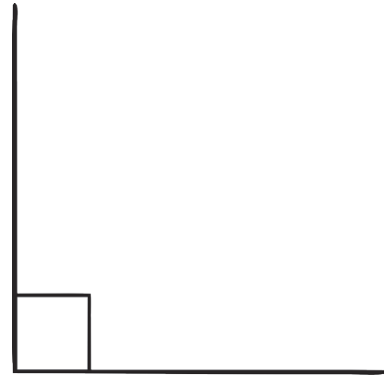
**orientation**

**angle**



**turn**

**right angle**



**half turn**

**three-quarter turn**

**complete turn**

**greater than**  $>$

**less than**  $<$

**horizontal  
line** 

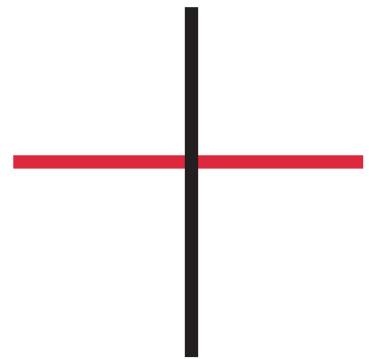
**vertical line**



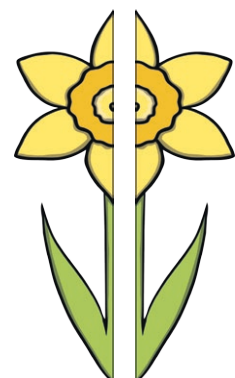
**parallel lines**



**perpendicular  
lines**



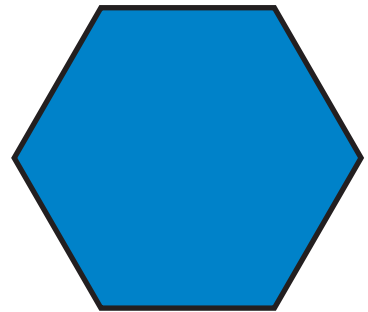
**symmetry**



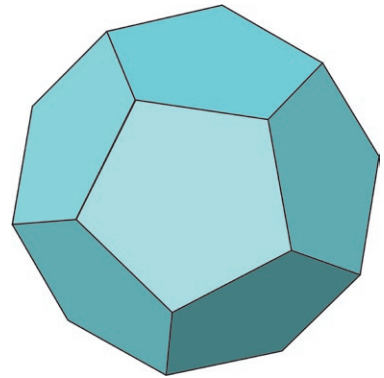
**symmetrical**



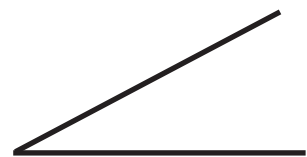
**polygon**



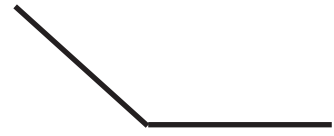
**polyhedra**



**acute**



**obtuse**

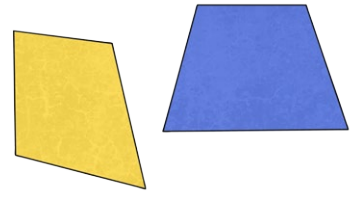


**compare**

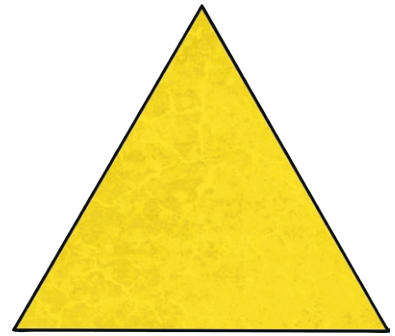
**classify**

**geometric**

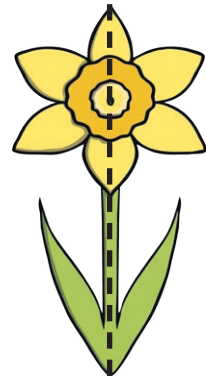
**quadrilateral**



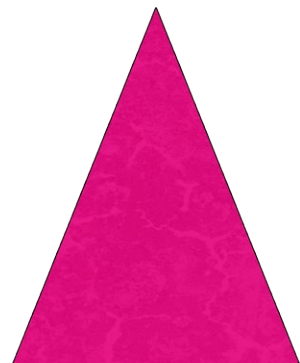
**triangle**



**lines of  
symmetry**

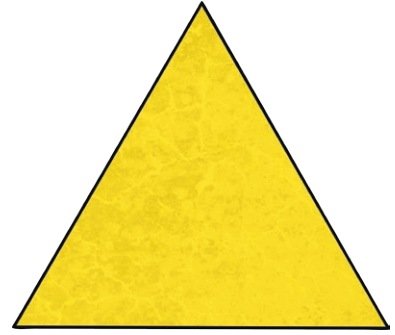


**isosceles**

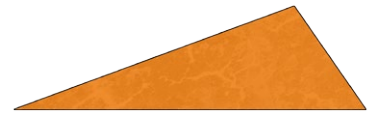




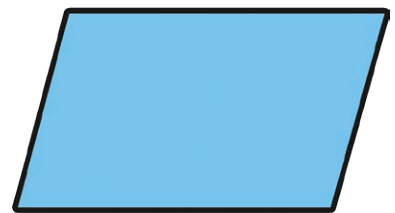
**equilateral**



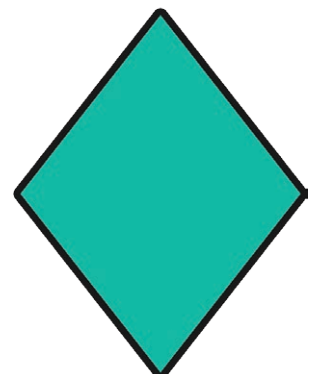
**scalene**



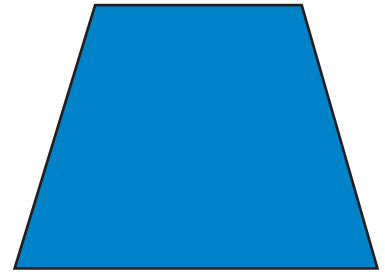
**parallelogram**



**rhombus**

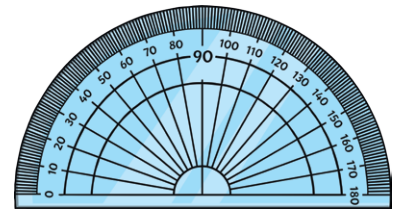


**trapezium**

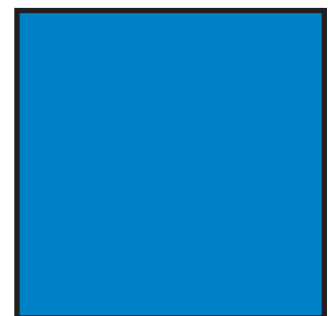


**order**

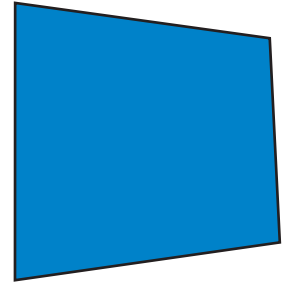
**protractor**



**regular shape**



**irregular  
shape**



**flat**

**curved**

**edge**

**vertex**

**vertices**

**face**

**side**

**mirror line**

# Properties of Shapes Recognising Turns

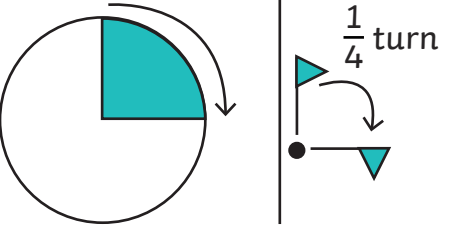
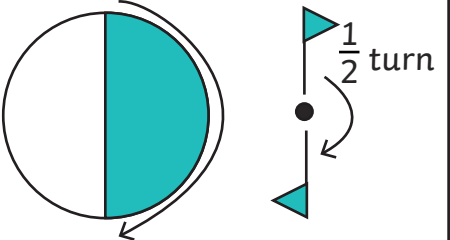
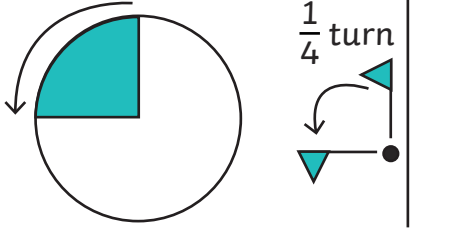
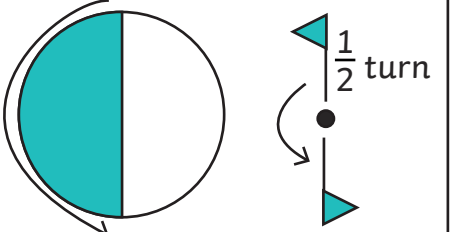
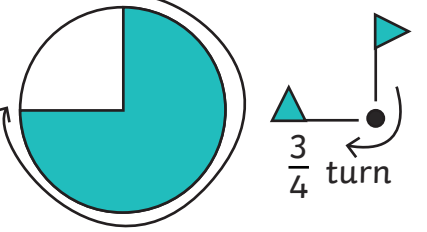
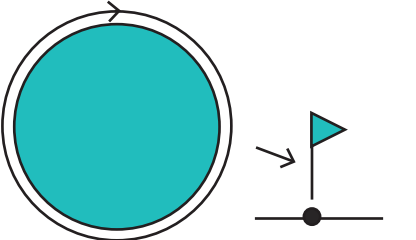
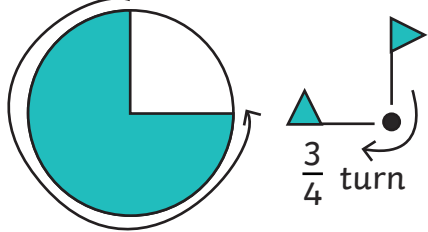
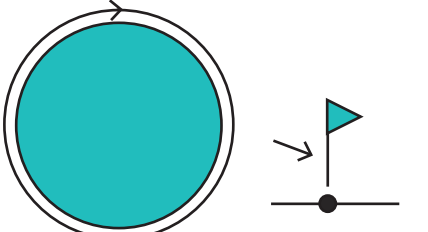
A turn is to rotate about a point.

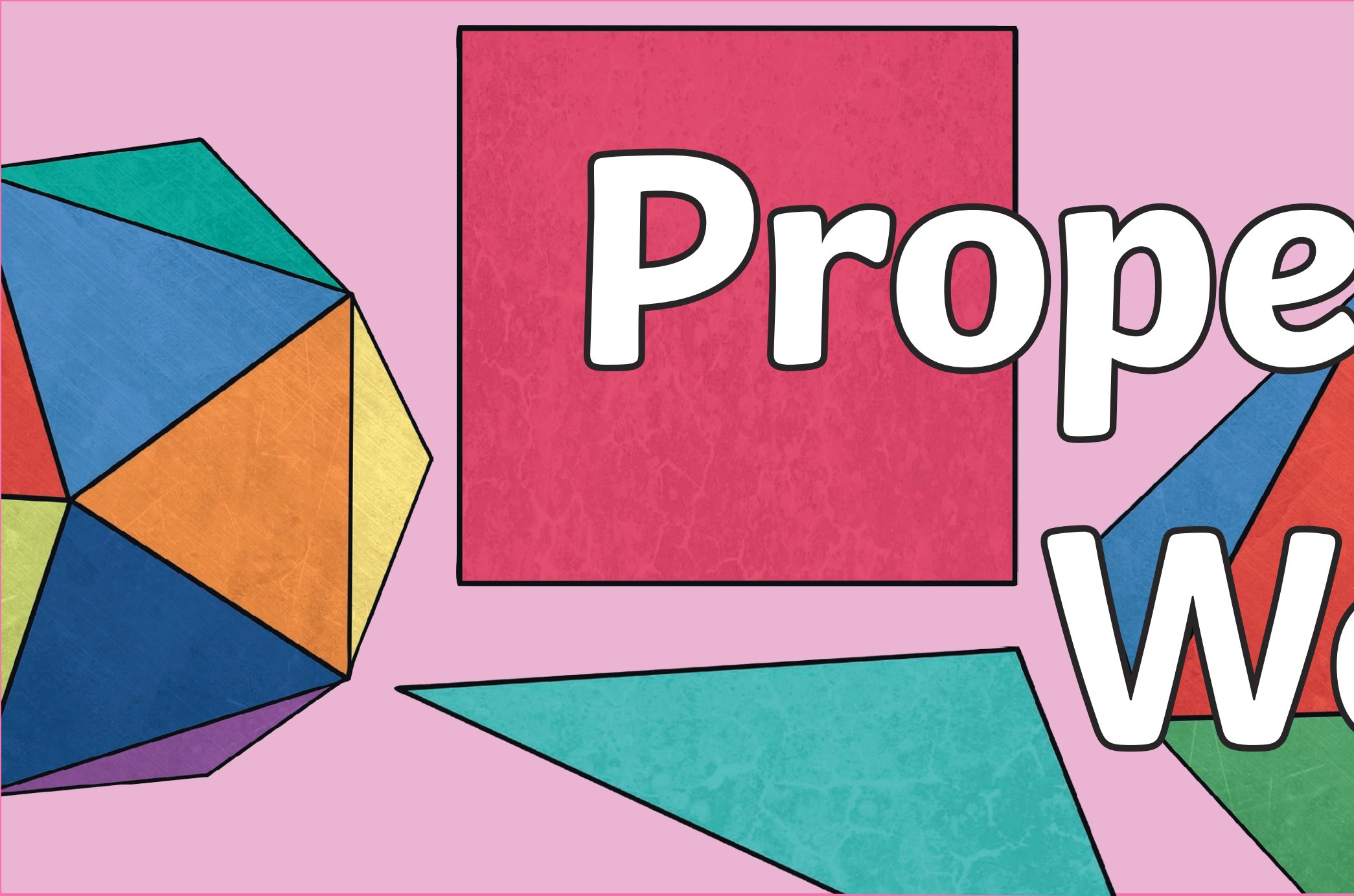
A turn can be described as a quarter-turn, half-turn, three-quarter turn or a complete turn.

A turn can be completed clockwise and anticlockwise.

## Clockwise

## Anticlockwise

 <p>1 right angle quarter-turn clockwise 90°</p>	 <p>2 right angles half-turn clockwise 180°</p>	 <p>1 right angle quarter-turn anticlockwise 90°</p>	 <p>2 right angles half-turn anticlockwise 180°</p>
 <p>3 right angles three-quarter turn clockwise 270°</p>	 <p>4 right angles complete turn clockwise 360°</p>	 <p>3 right angles three-quarter turn anticlockwise 270°</p>	 <p>4 right angles complete turn anticlockwise 360°</p>



Prope

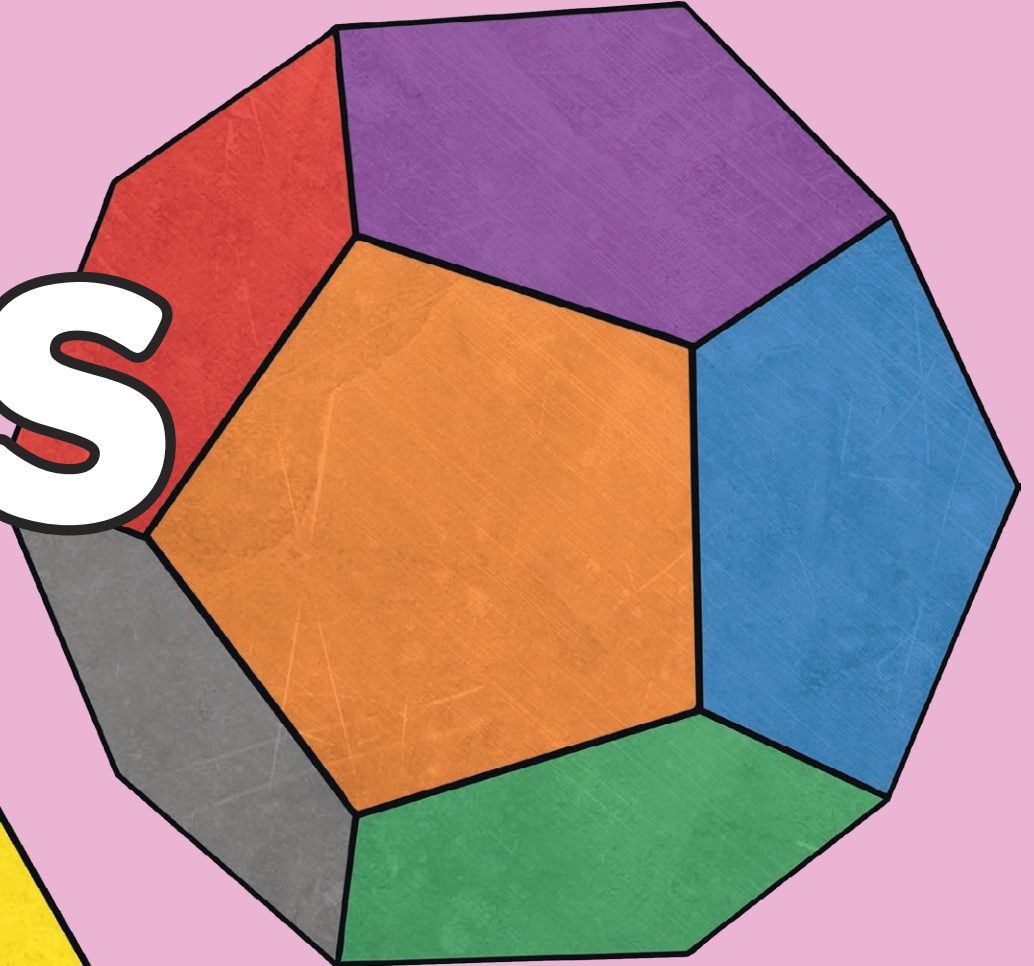
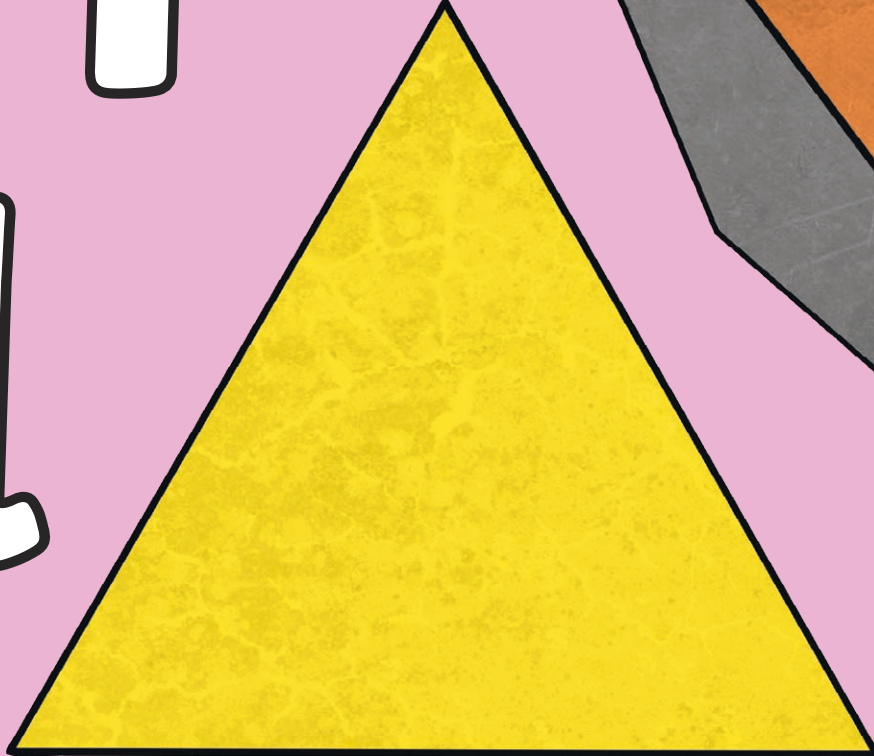
w



Properties of Solids  
Working wwo

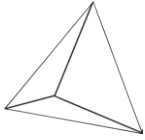
hapes

all

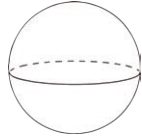


Photographing 3D Shapes in the Environment **Challenge Cards**

You must find examples of...



pyramids

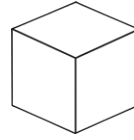


spheres

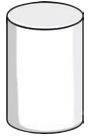
and include them in your photographs from the environment.

Photographing 3D Shapes in the Environment **Challenge Cards**

You must find examples of...



cubes

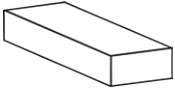


cylinders

and include them in your photographs from the environment.

Photographing 3D Shapes in the Environment **Challenge Cards**

You must find examples of...



cuboids

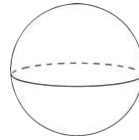


triangular prisms

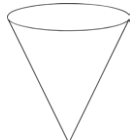
and include them in your photographs from the environment.

Photographing 3D Shapes in the Environment **Challenge Cards**

You must find examples of...



spheres

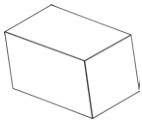


cones

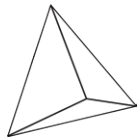
and include them in your photographs from the environment.

Photographing 3D Shapes in the Environment **Challenge Cards**

You must find examples of...



two types of prisms

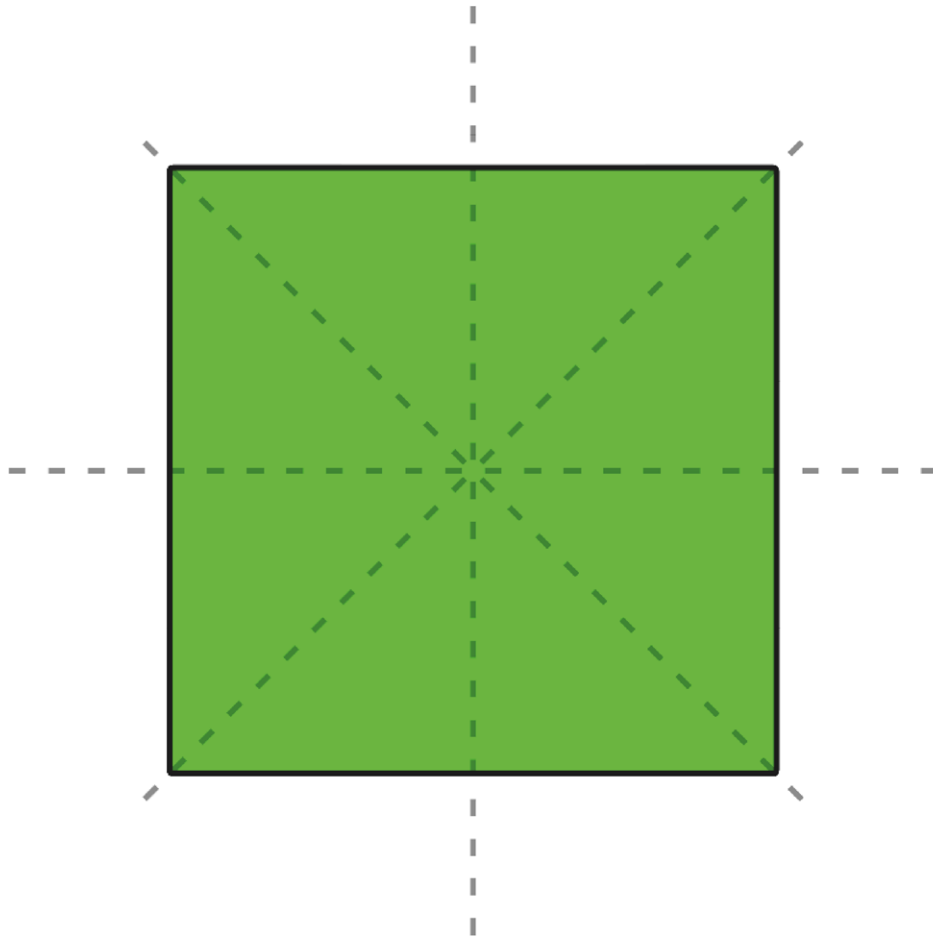


two types of pyramids

and include them in your photographs from the environment.

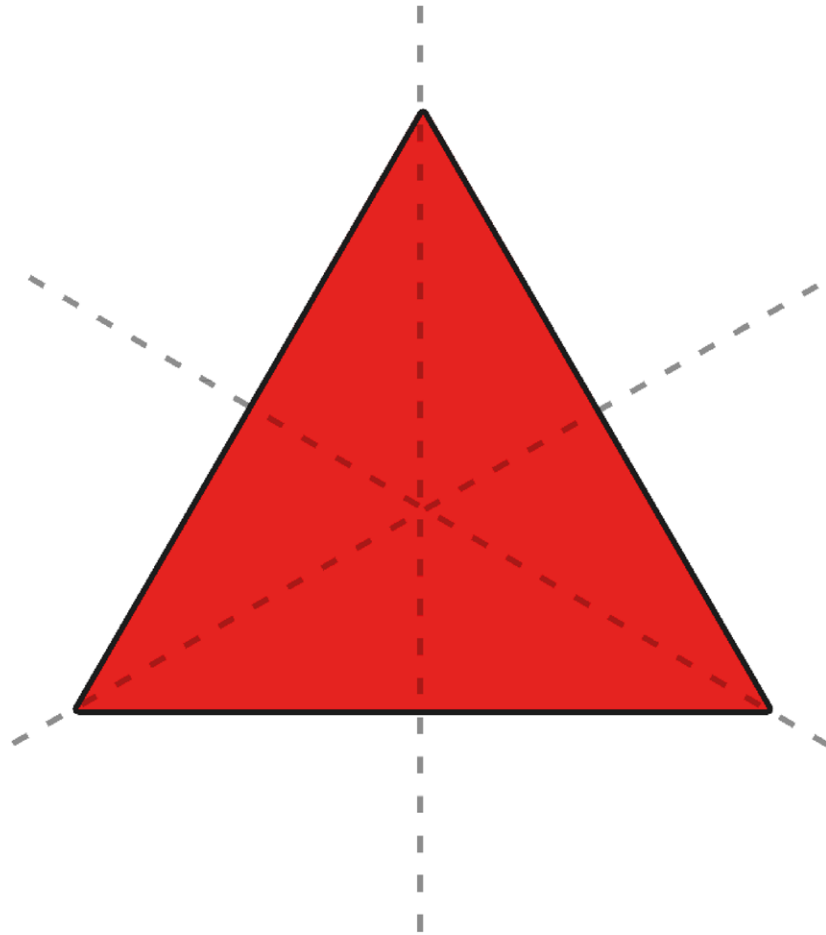


# Square



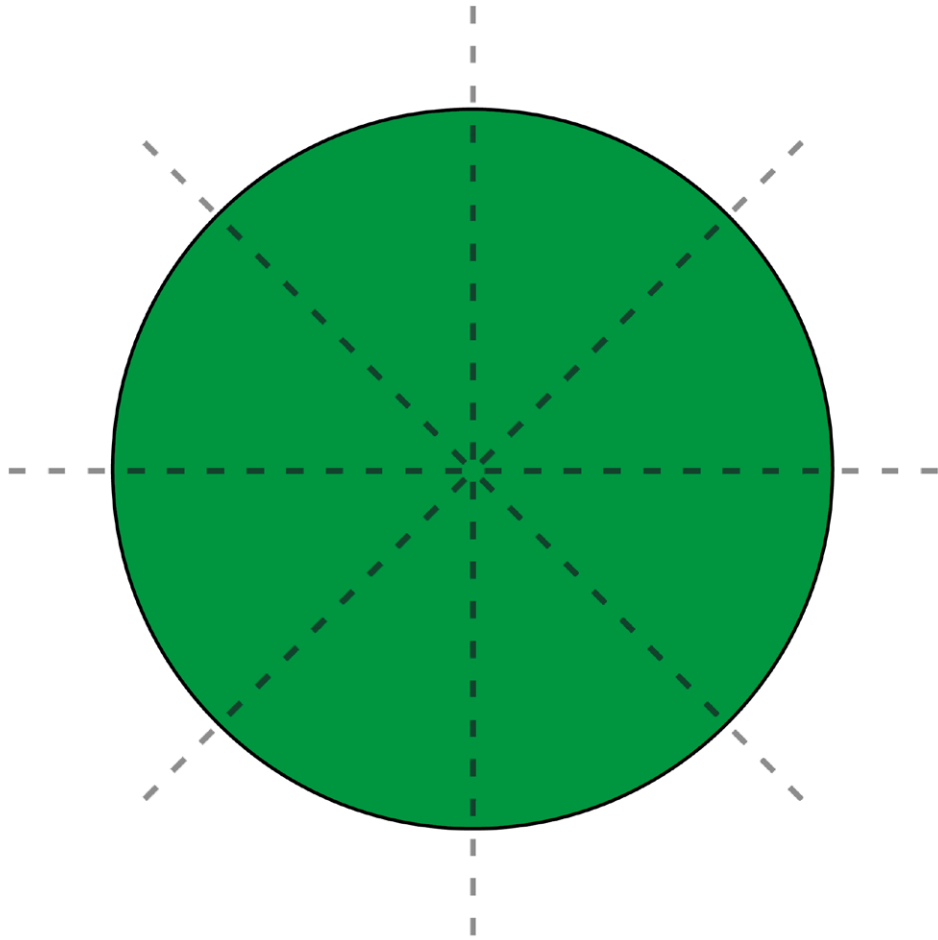
Sides	4
Vertices	4
Angles	add to $360^\circ$
Symmetry	4 Lines

# Equilateral Triangle



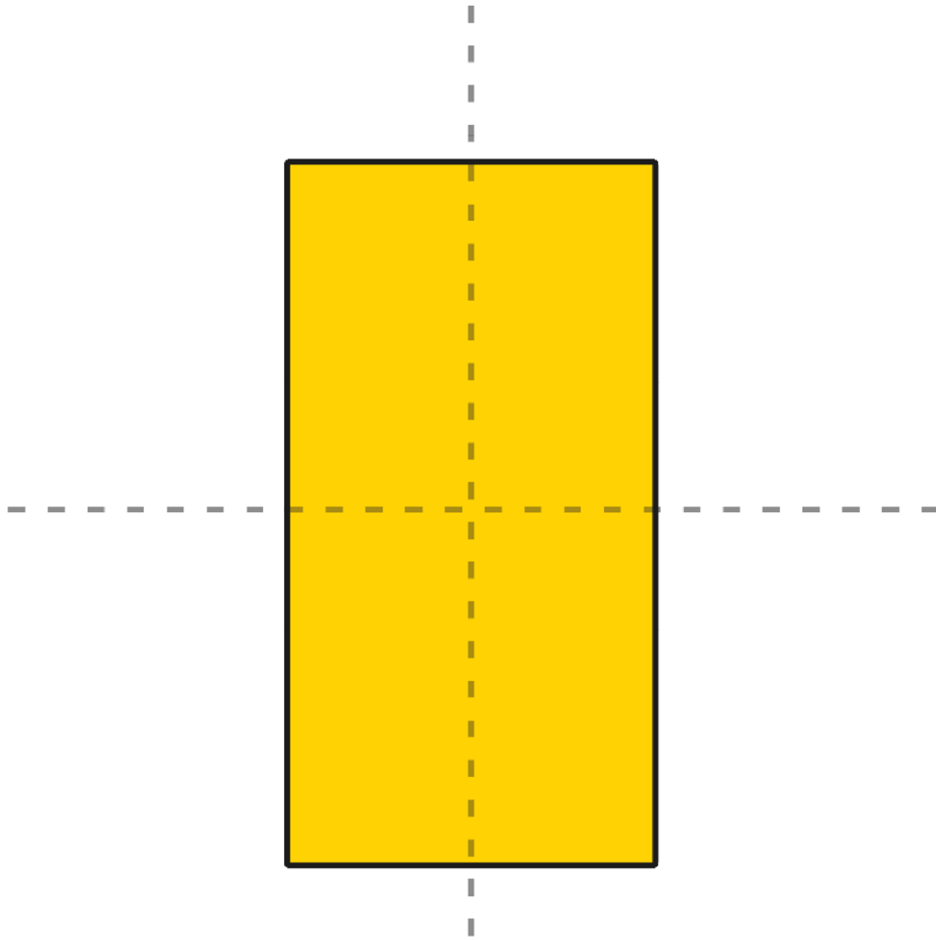
Sides	3
Vertices	3
Angles	add to $180^\circ$
Symmetry	3 Lines

# Circle



Sides	1
Vertices	0
Symmetry	Infinite

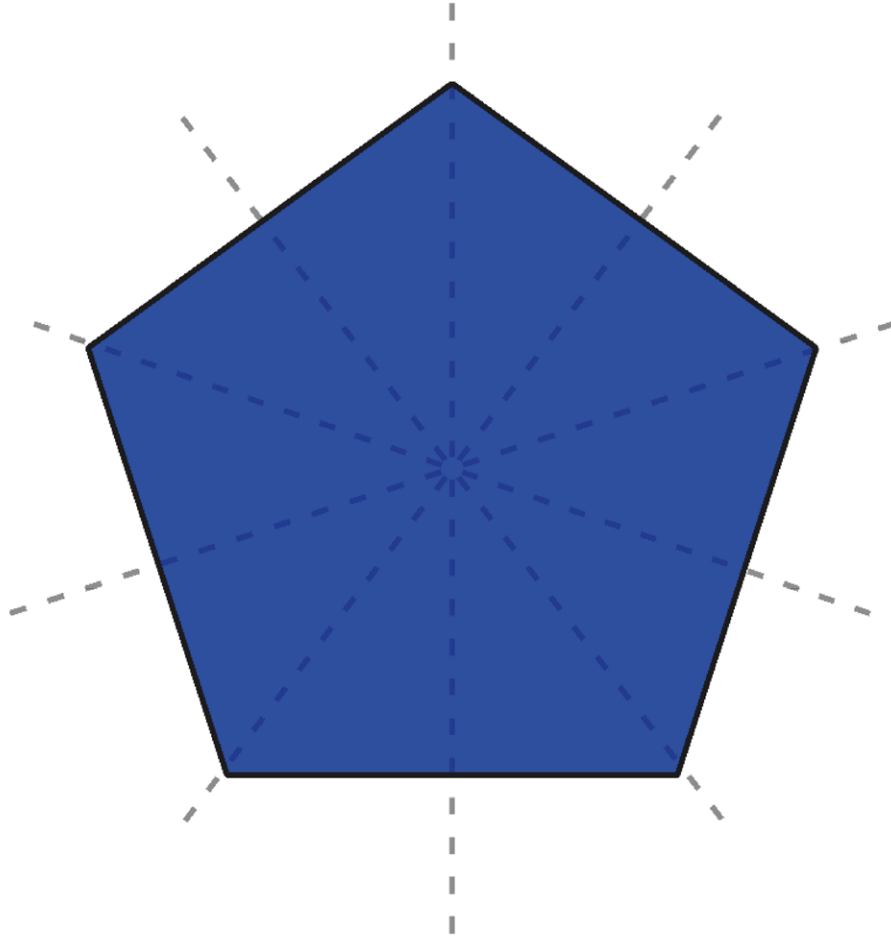
# Rectangle



Sides	4
Vertices	4
Angles	add to $360^\circ$
Symmetry	2 Lines

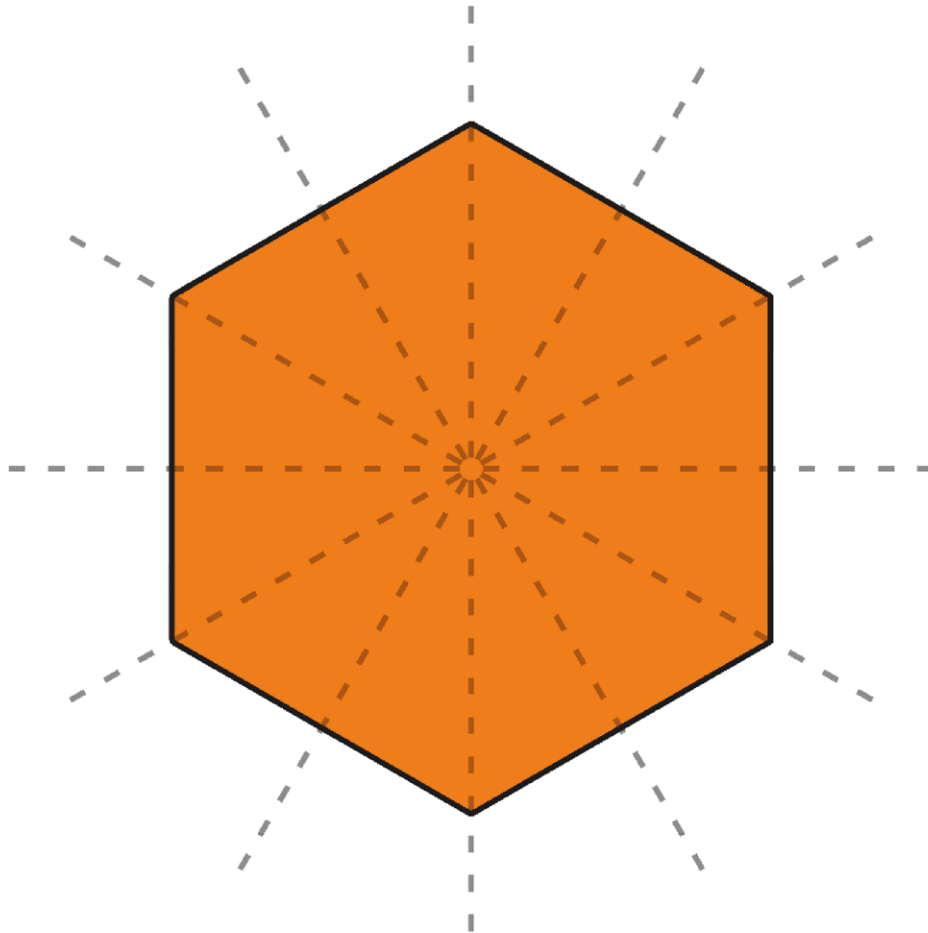


# Regular Pentagon



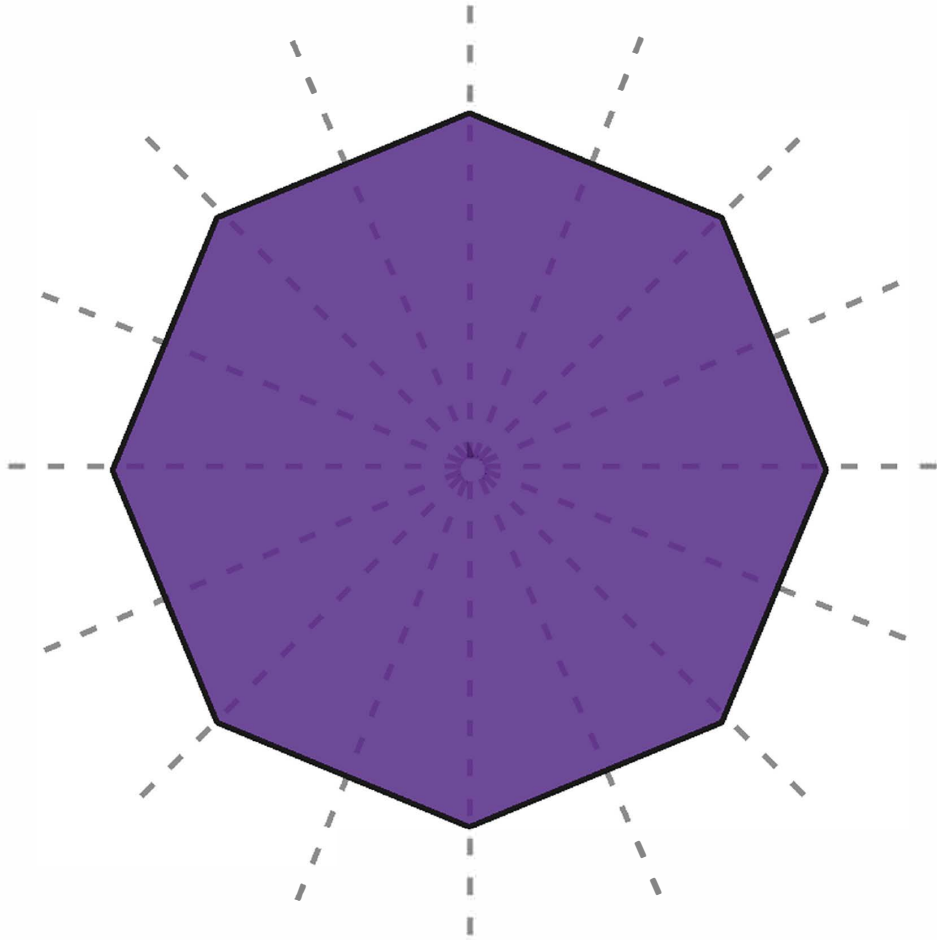
Sides	5
Vertices	5
Angles	add to $540^\circ$
Symmetry	5 Lines

# Regular Hexagon



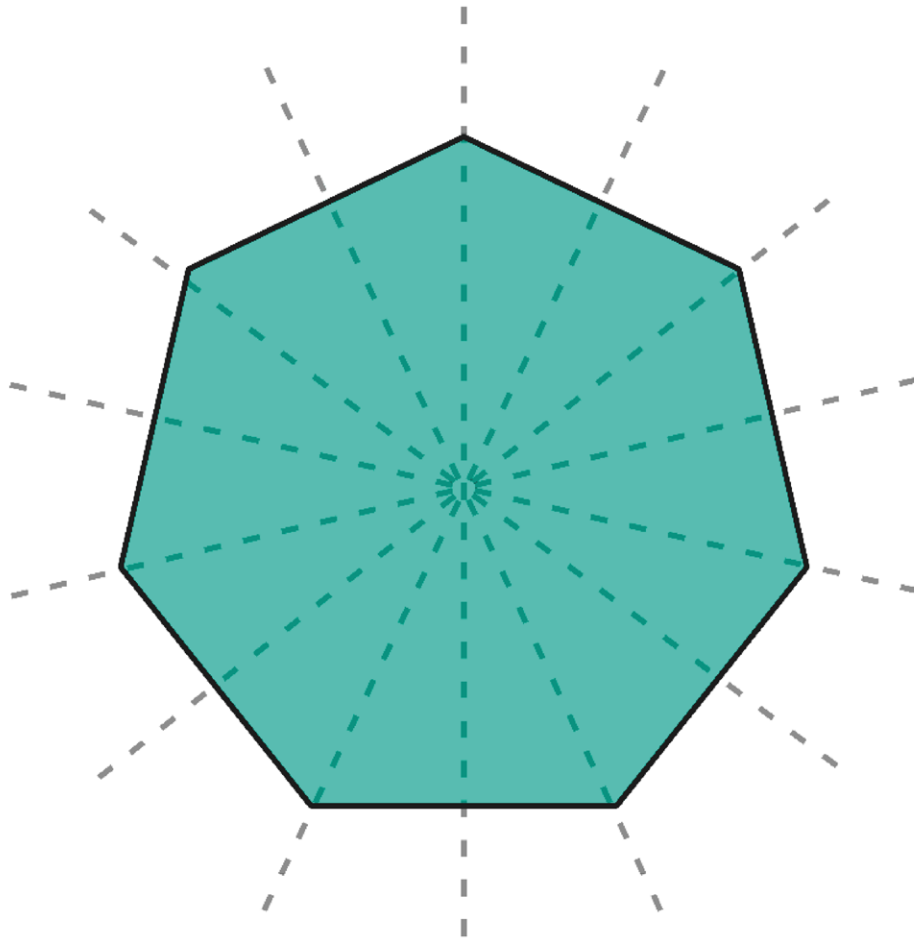
Sides	6
Vertices	6
Angles	add to $720^\circ$
Symmetry	6 Lines

# Regular Octagon



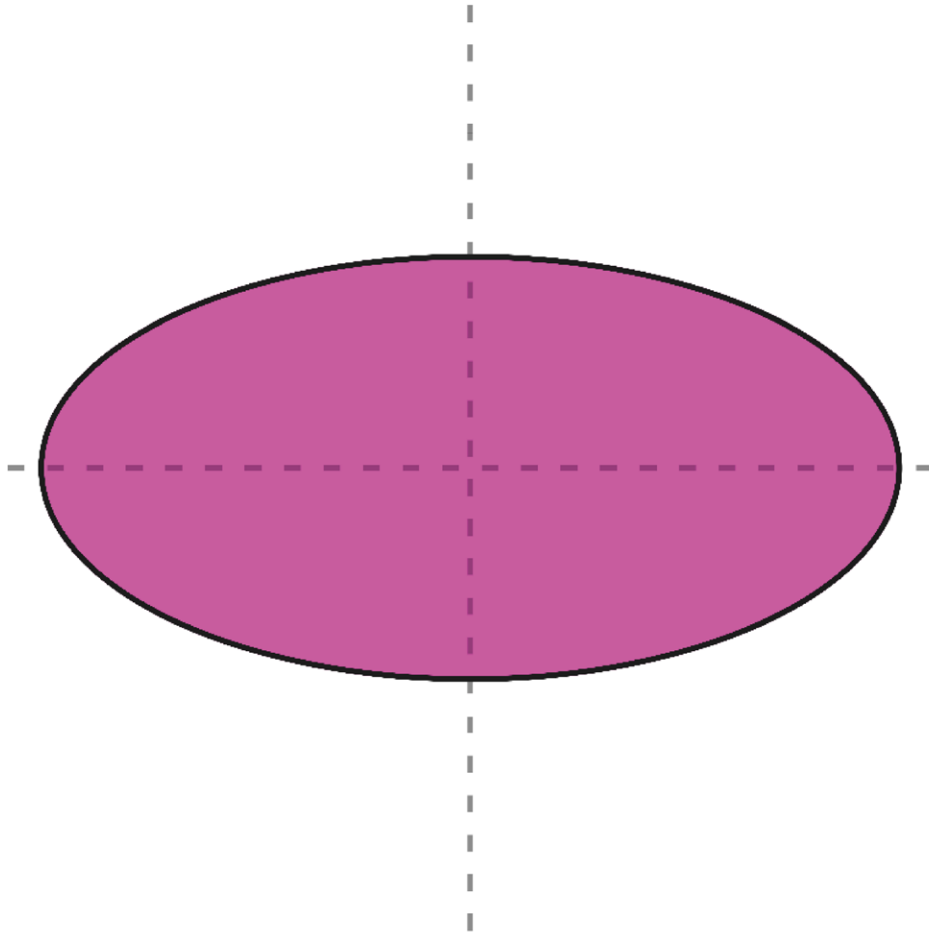
Sides	8
Vertices	8
Angles	add to $1080^\circ$
Symmetry	8 Lines

# Regular Heptagon



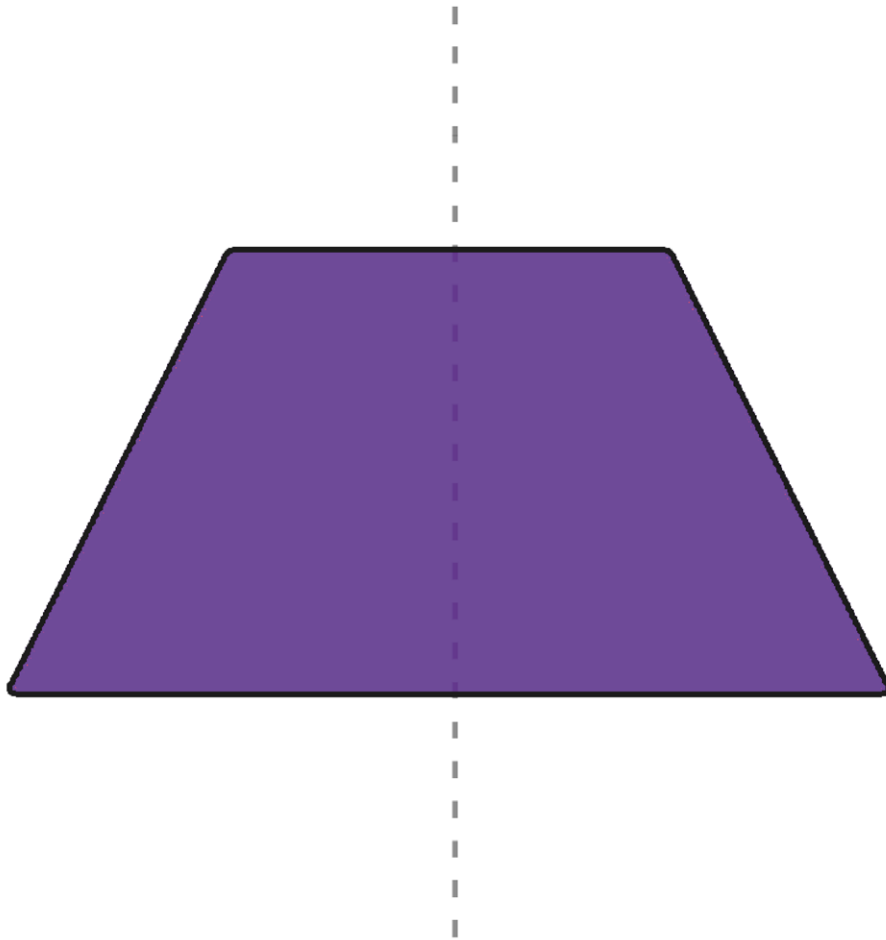
Sides	7
Vertices	7
Angles	add to $900^\circ$
Symmetry	7 Lines

# Oval



Sides	1
Vertices	0
Symmetry	2 Lines

# Trapezium



Sides	4
Vertices	4
Angles	add to $360^\circ$
Symmetry	1 Lines

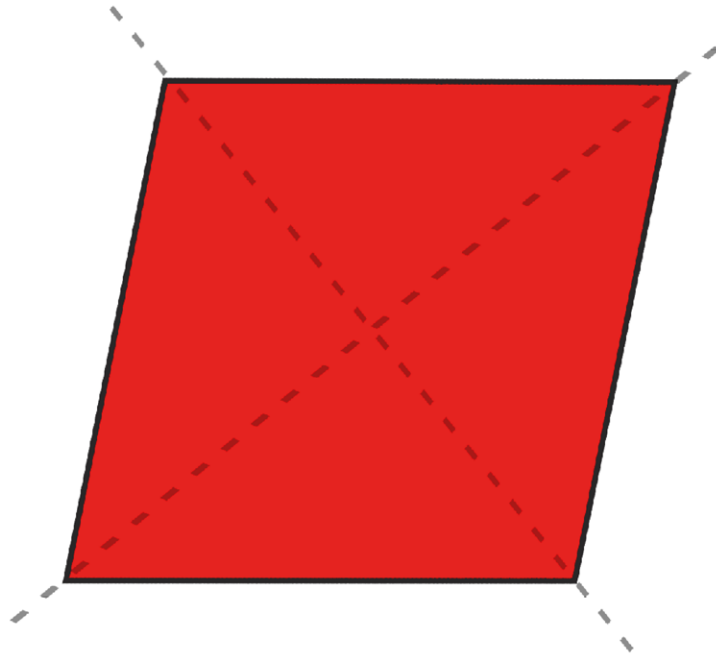
# Parallelogram



Sides	4
Vertices	4
Angles	add to $360^\circ$
Symmetry	0 Lines

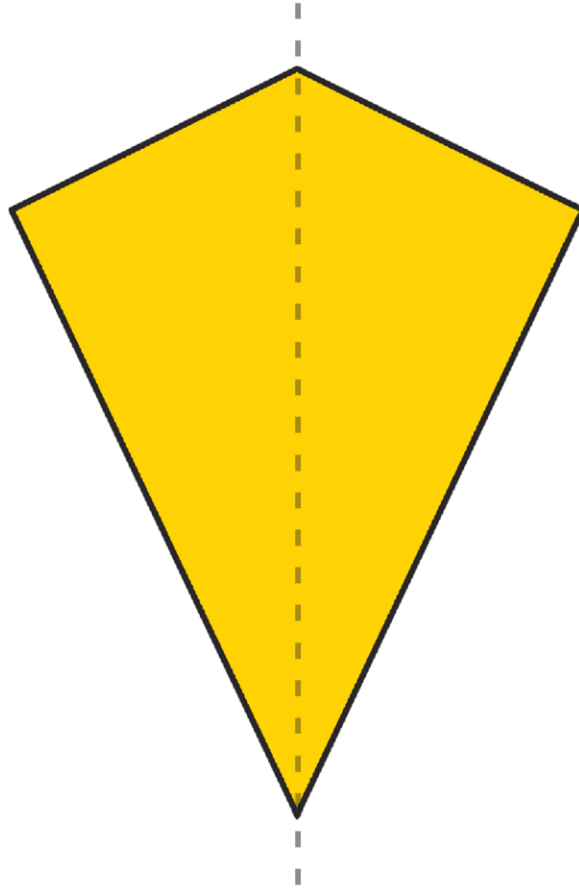


# Rhombus



Sides	4
Vertices	4
Angles	add to 360
Symmetry	2 Lines

# Kite



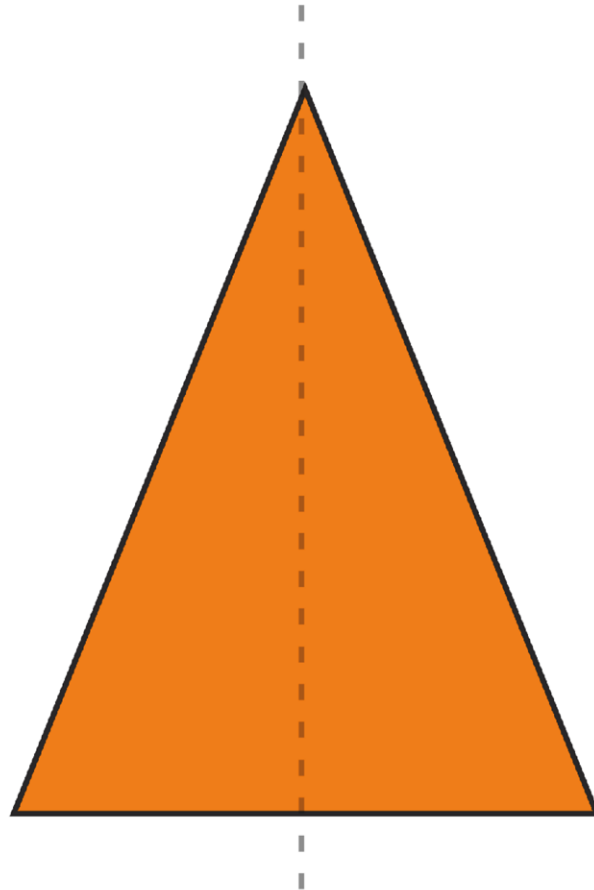
Sides	4
Vertices	4
Angles	add to $360^\circ$
Symmetry	1 Lines

# Right-angled Triangle



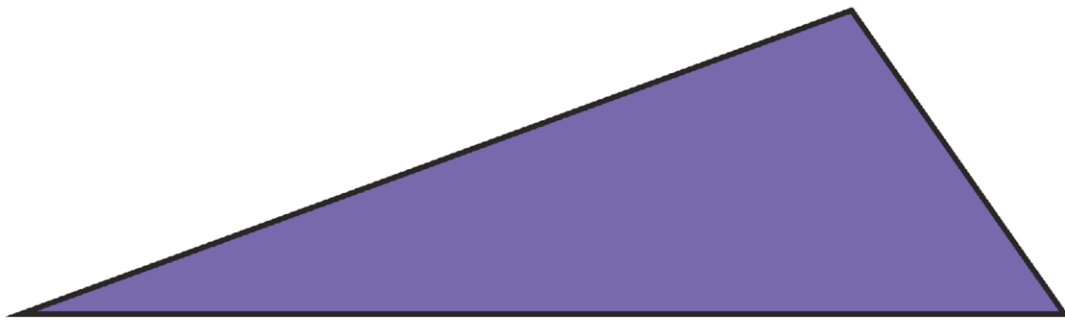
Sides	3
Vertices	3
Angles	add to $180^\circ$
Symmetry	sometimes 1 line

# Isosceles Triangle



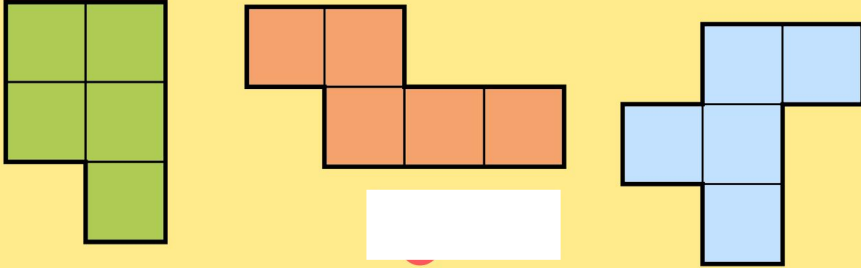
Sides	3
Vertices	3
Angles	add to $180^\circ$
Symmetry	1 Lines

# Scalene Triangle

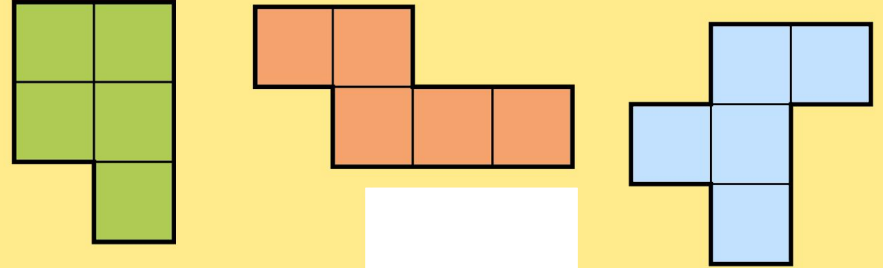


Sides	3
Vertices	3
Angles	add to $180^\circ$
Symmetry	0 Lines

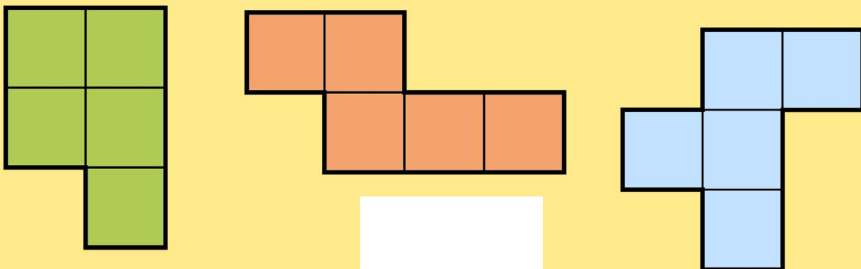
# Properties of Shapes Challenge Cards



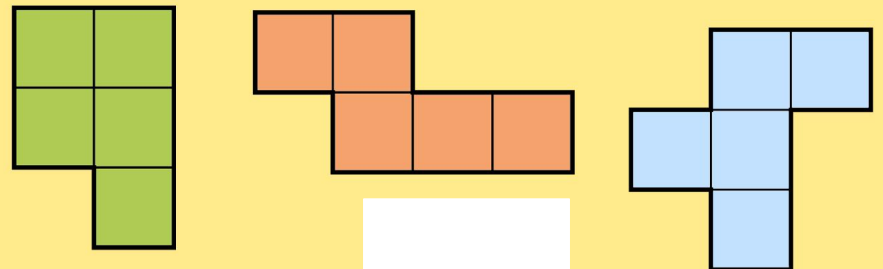
# Properties of Shapes Challenge Cards



# Properties of Shapes Challenge Cards

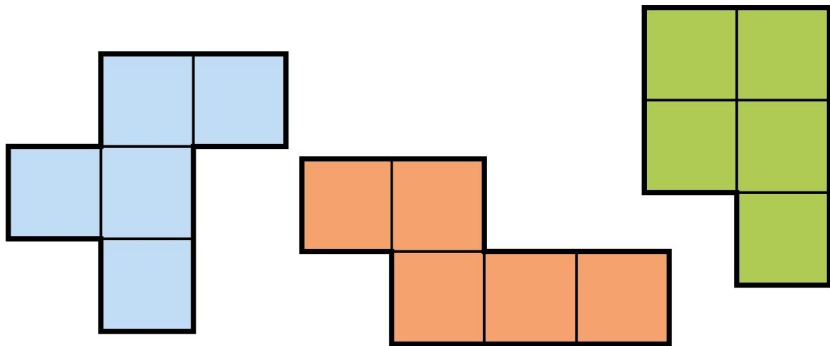


# Properties of Shapes Challenge Cards



1

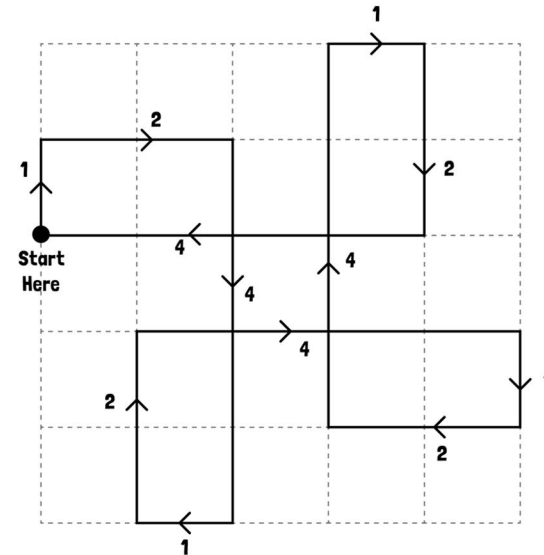
How many different shapes can you make using five squares?



2

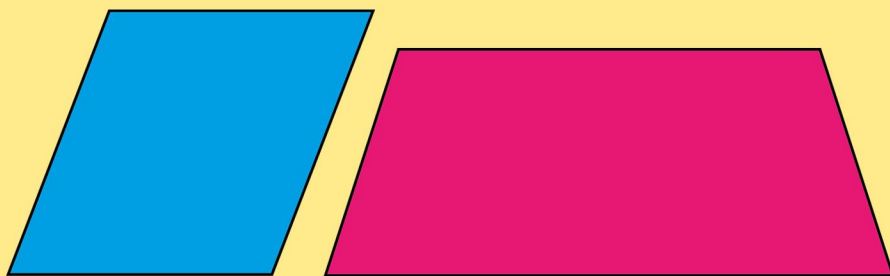
The diagram shows a (1,2,4) pattern.  
 Along 1, Turn, Along 2,  
 Turn, Along 4, Turn.

Repeat these moves until  
 you get back to the start.  
 (The worm always turns  
 in the same direction).



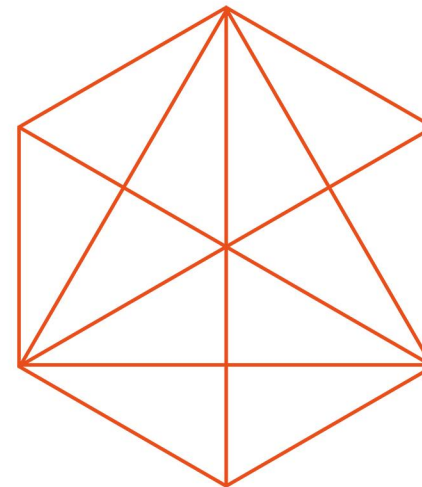
Explore the (1,2,3) pattern

3



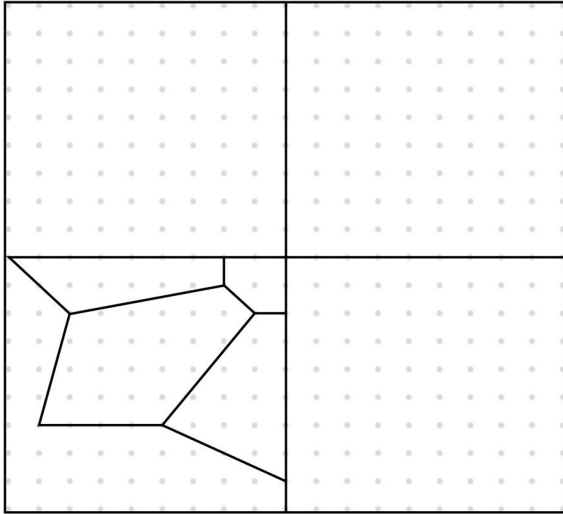
Use a geoboard.  
 Make 5 different quadrilaterals.  
 How is each quadrilateral different?

4



How many triangles can you see in this image?

5 Can you complete the symmetrical drawing?



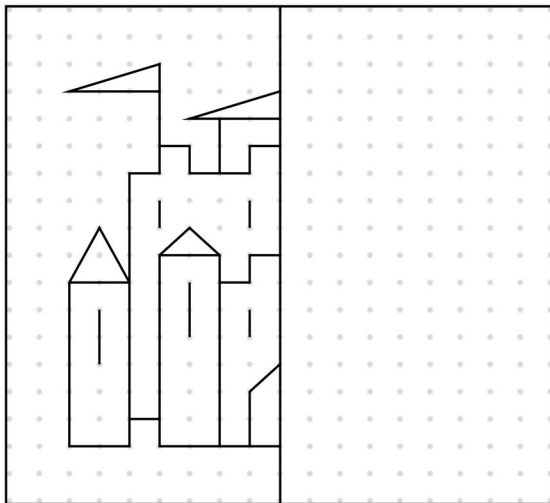
6 Write your name in capital letters.

Colour the **acute** angles **blue**.

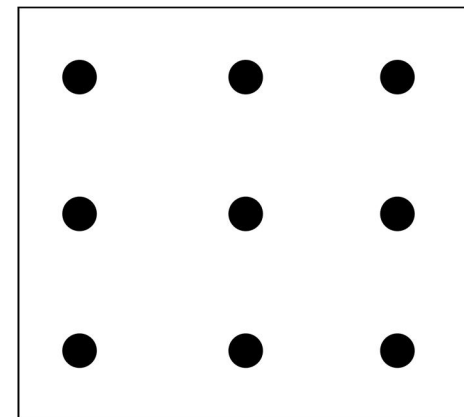
Colour **right** angles **red**.

Colour **obtuse** angles **green**.

7 Can you complete the symmetrical drawing?



8 How many different triangles can you make on this peg board?

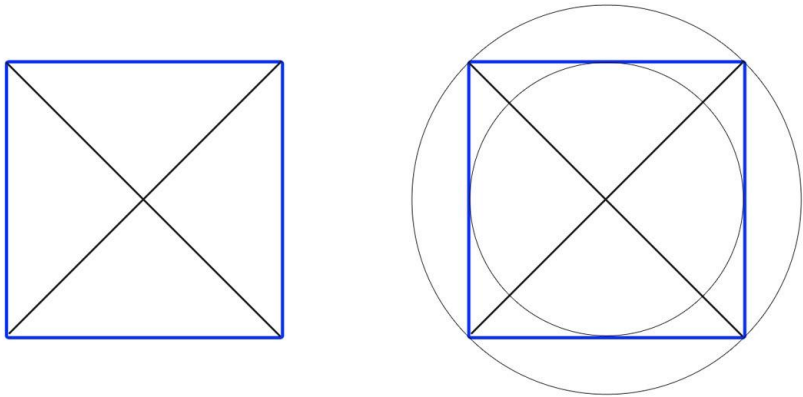




1

Carefully draw or trace a square, leaving a few cm around the outside.  
Draw the diagonals to find the centre.

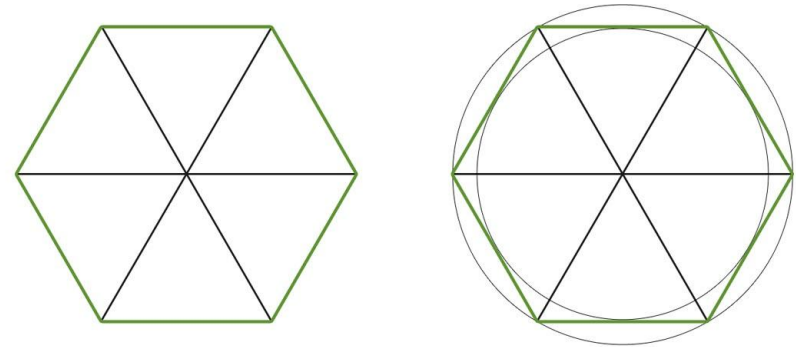
Using a compass, draw a circle around the inside of the shape touching all the sides,  
and around the outside, touching all the corners.



2

Carefully draw or trace a hexagon, leaving a few cm around the outside.  
Draw the diagonals to find the centre.

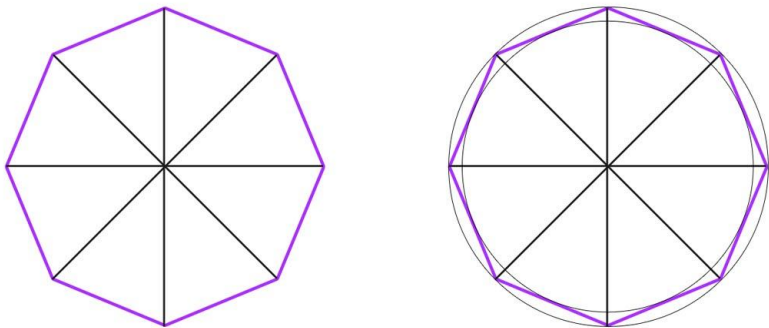
Using a compass, draw a circle around the inside of the shape touching all the sides,  
and around the outside, touching all the corners.



3

Carefully draw or trace an octagon, leaving a few cm around the outside.  
Draw the diagonals to find the centre.

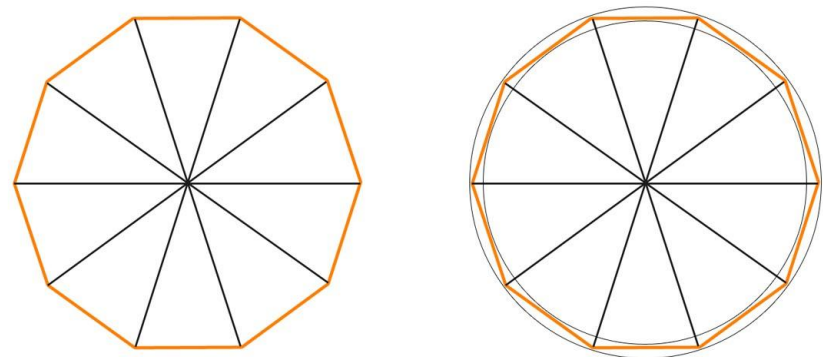
Using a compass, draw a circle around the inside of the shape touching all the sides,  
and around the outside, touching all the corners.



4

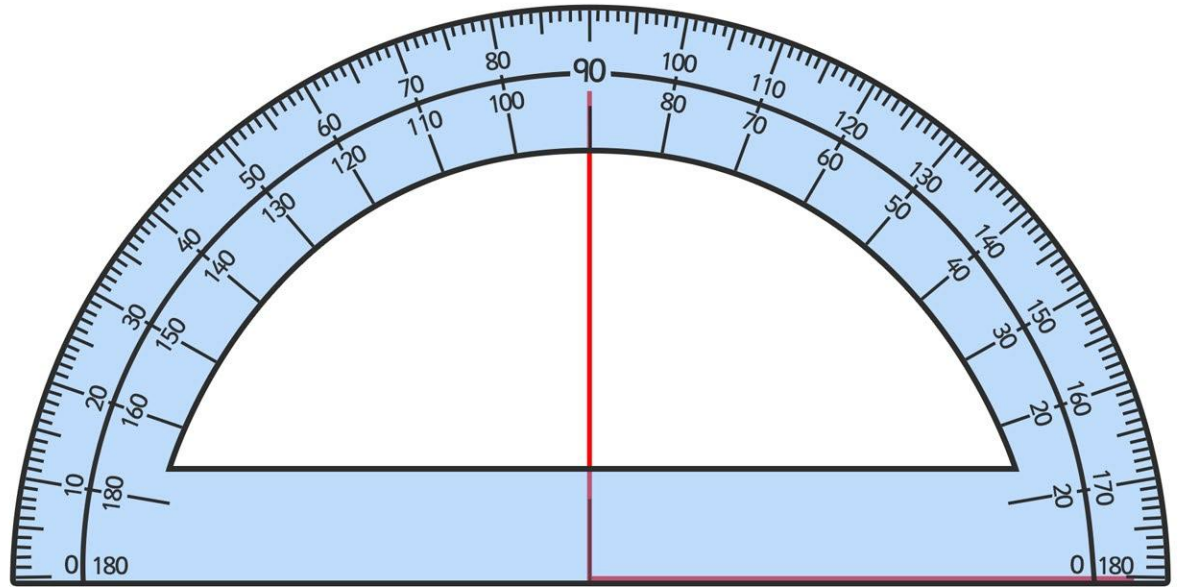
Carefully draw or trace a decagon, leaving a few cm around the outside.  
Draw the diagonals to find the centre.

Using a compass, draw a circle around the inside of the shape touching all the sides,  
and around the outside, touching all the corners.

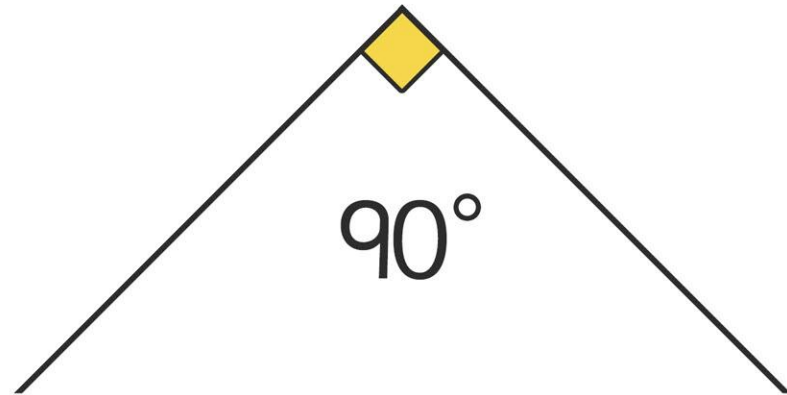
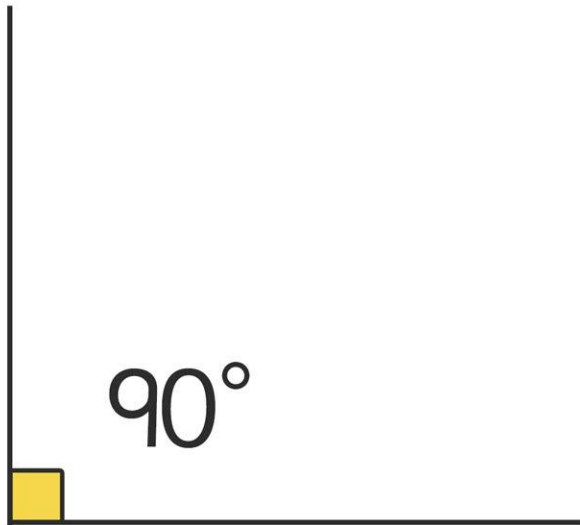


# Right Angle

A right angle is  $90^\circ$ .

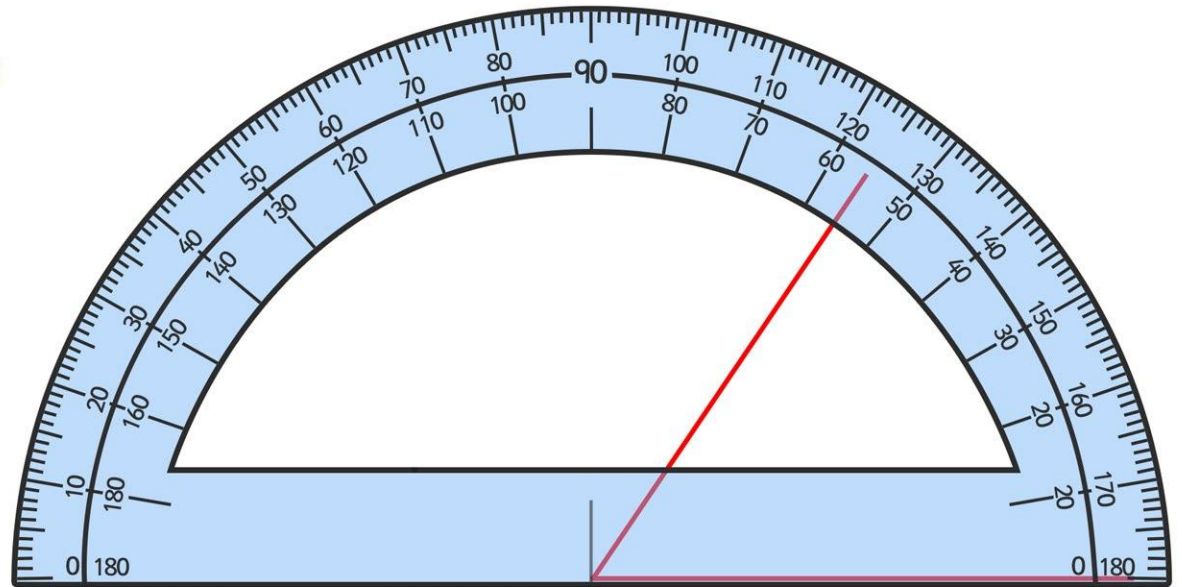


These are some examples of right angles.

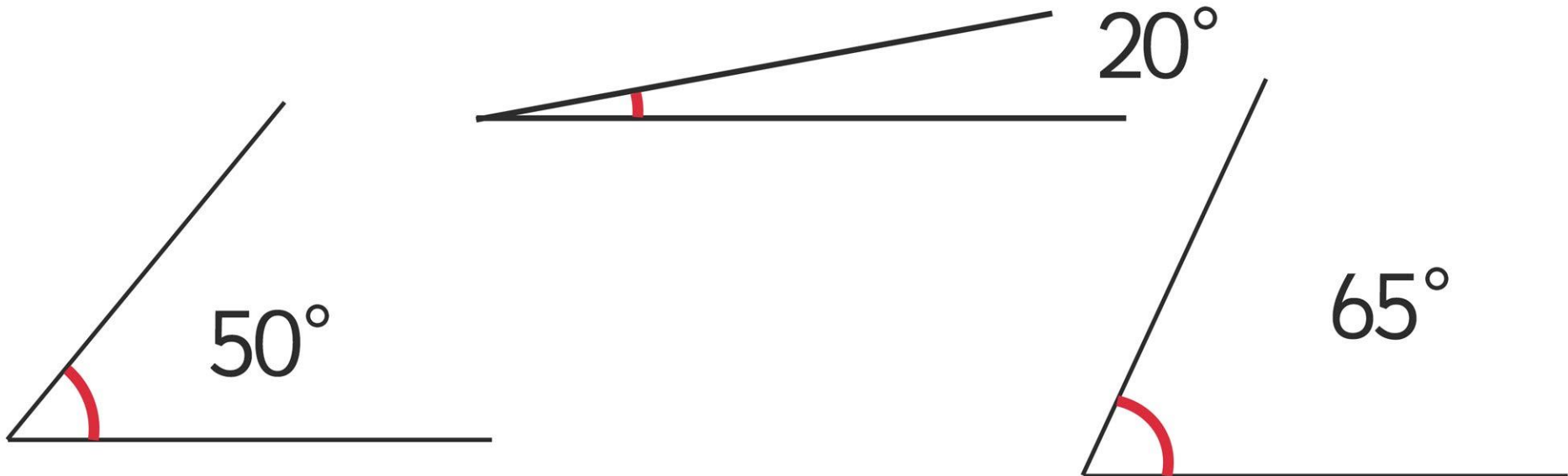


# Acute Angle

An acute angle is less than  $90^\circ$ .

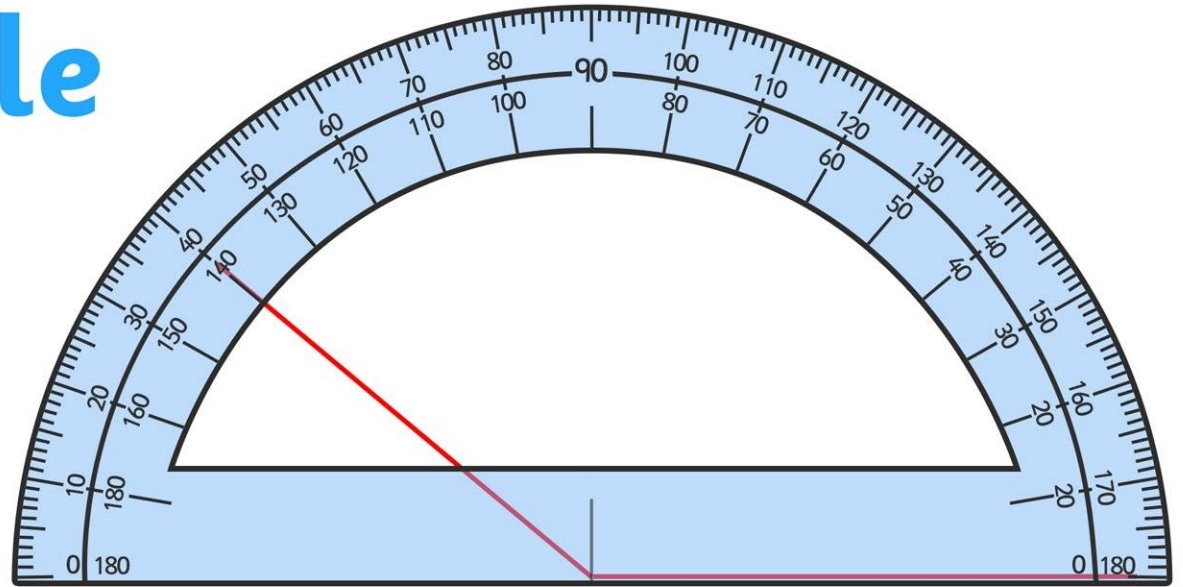


These are some examples of acute angles.

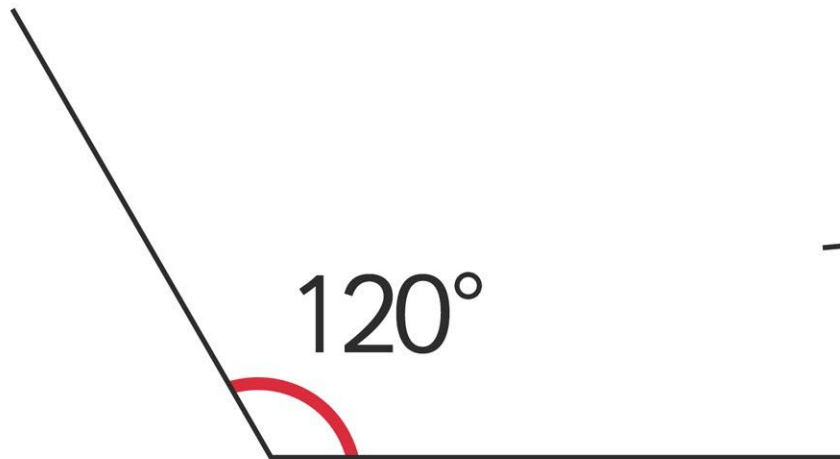


# Obtuse Angle

An obtuse angle is greater than  $90^\circ$  and less than  $180^\circ$ .



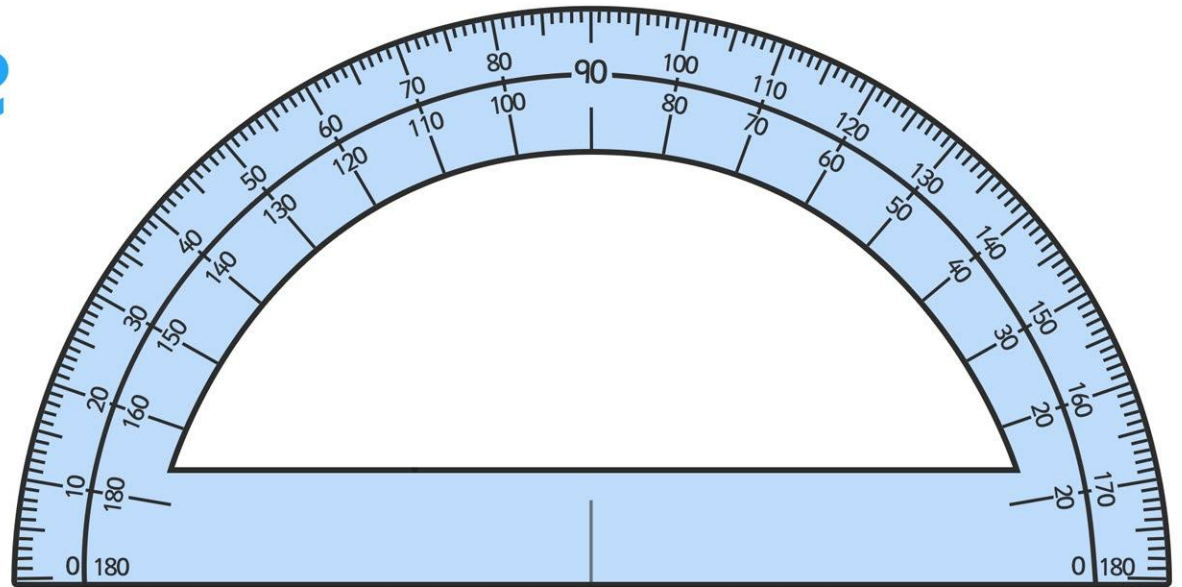
These are some examples of obtuse angles.



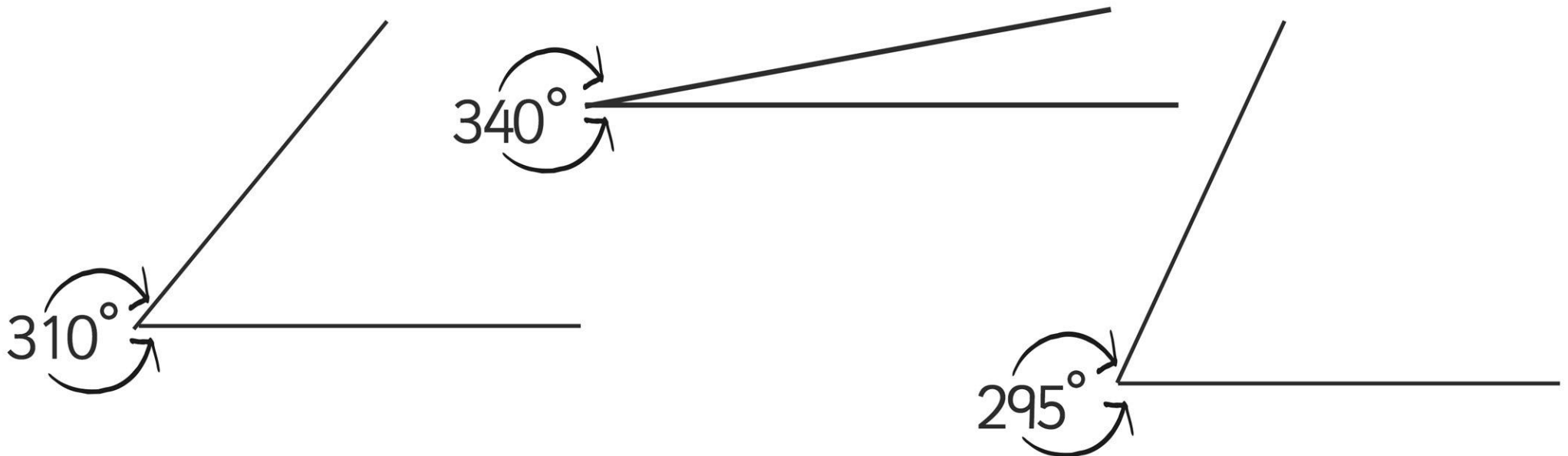


# Reflex Angle

A reflex angle is greater than  $180^\circ$  and less than  $360^\circ$ .

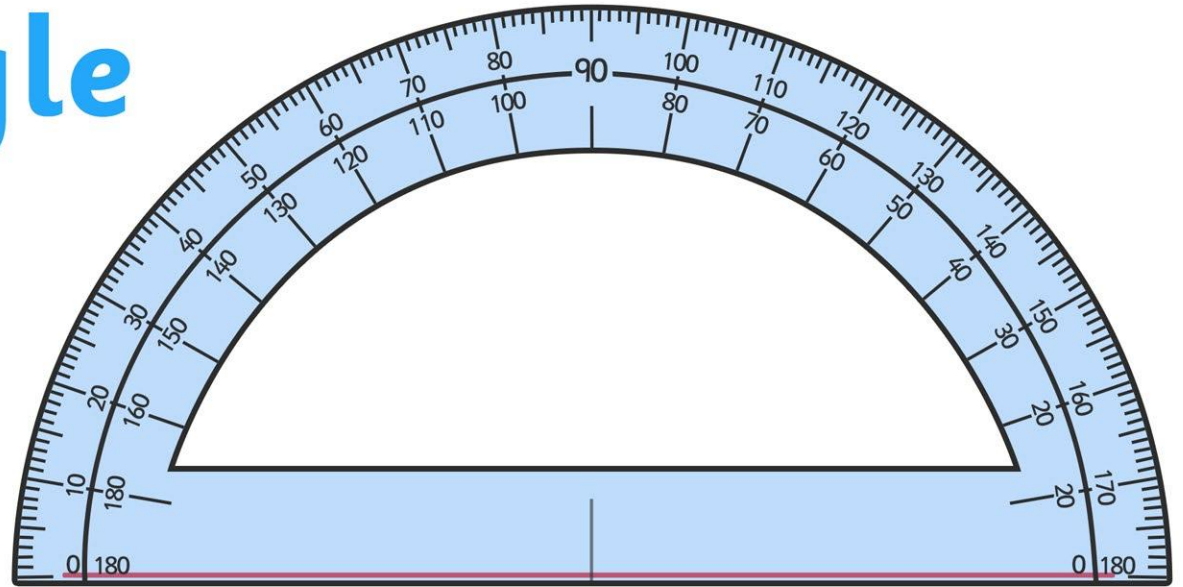


These are some examples of reflex angles.

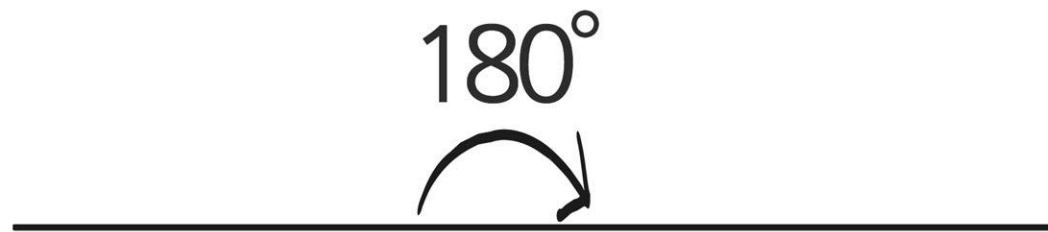


# Straight Angle

A straight angle  
is exactly  $180^\circ$ .

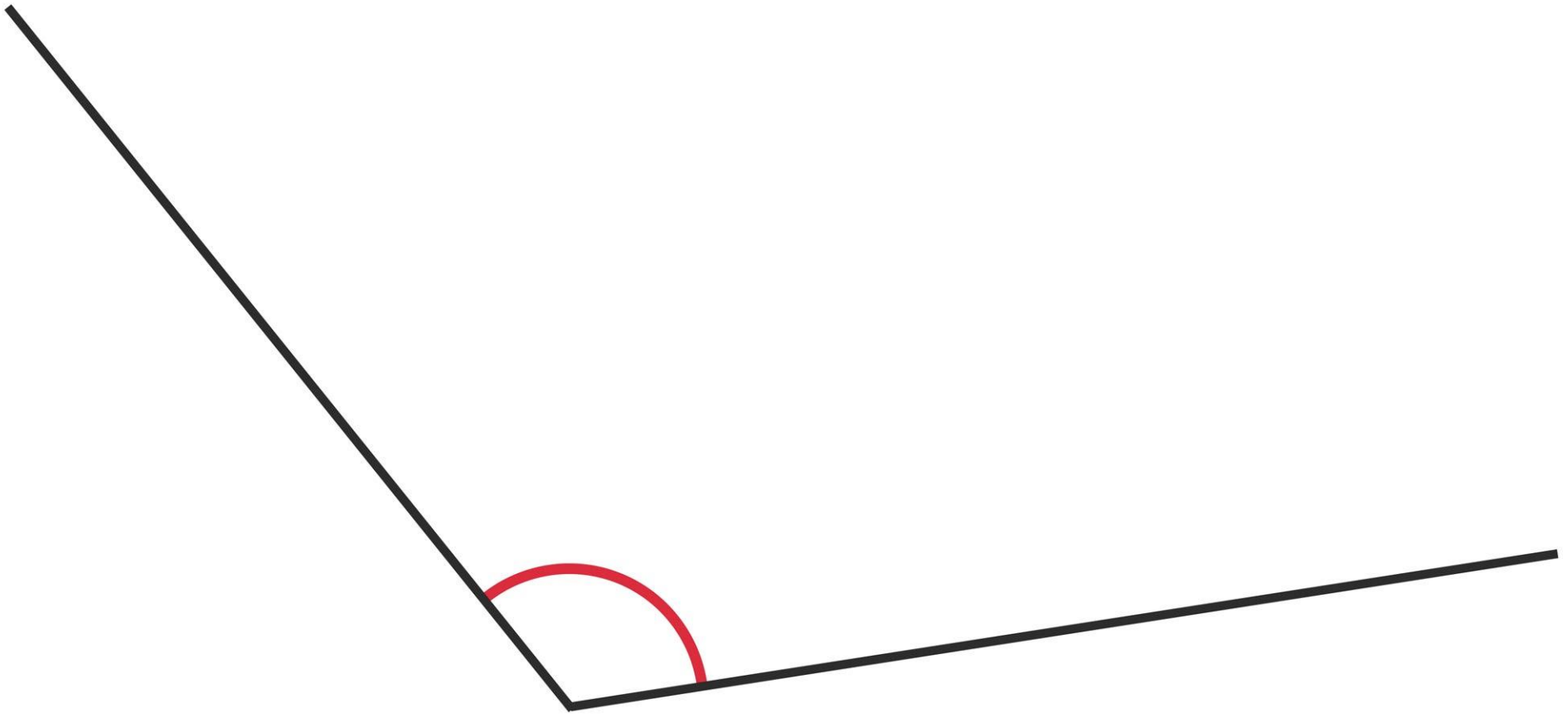


This is an example of a straight angle.



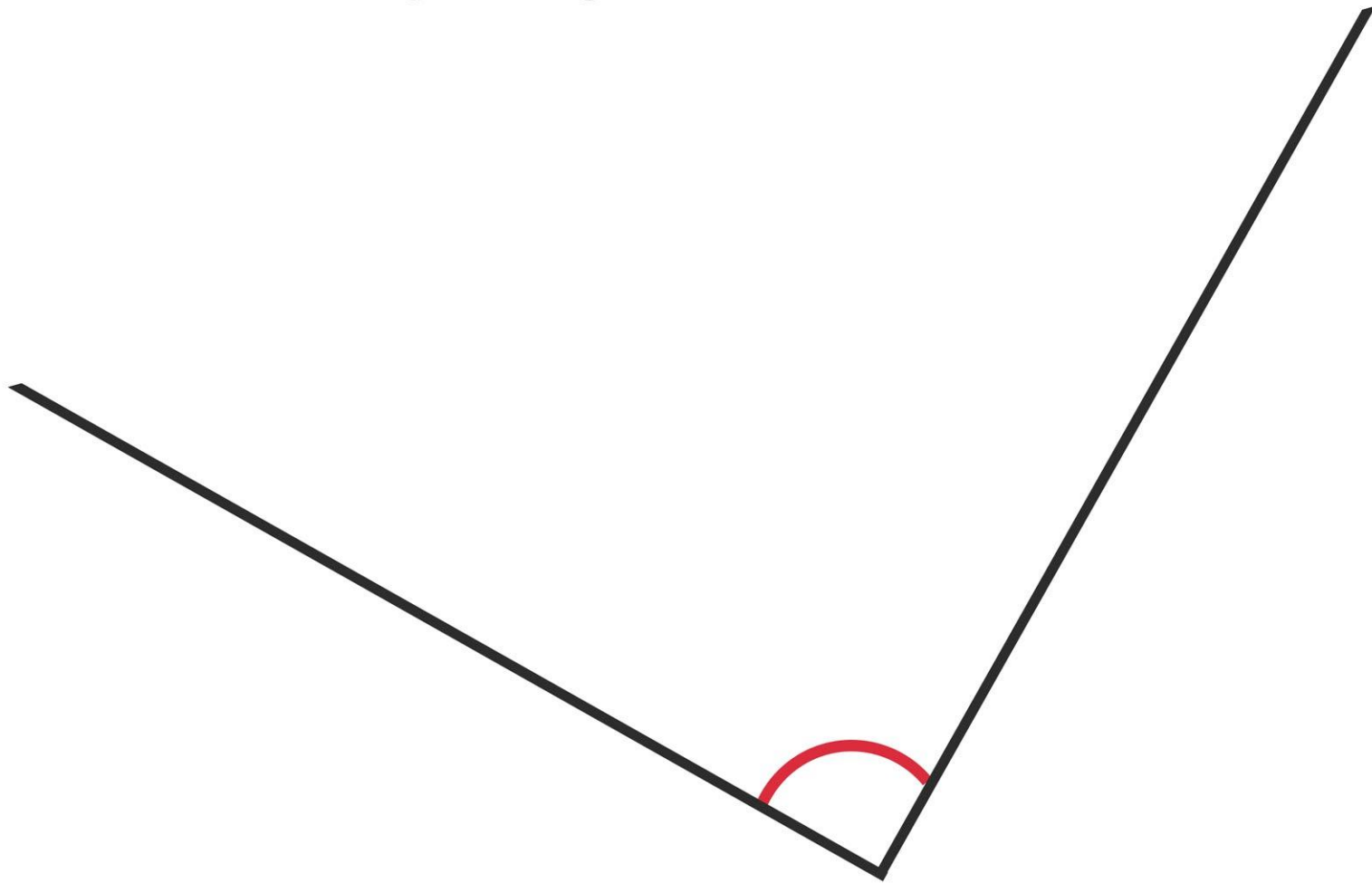
**Right angle, acute, obtuse, reflex or straight?**

**What kind of angle is this?**



**Right angle, acute, obtuse, reflex or straight?**

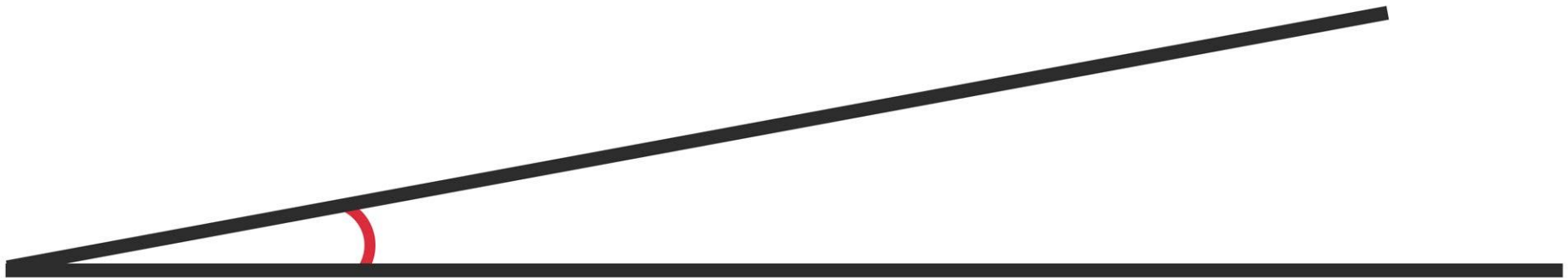
**What kind of angle is this?**





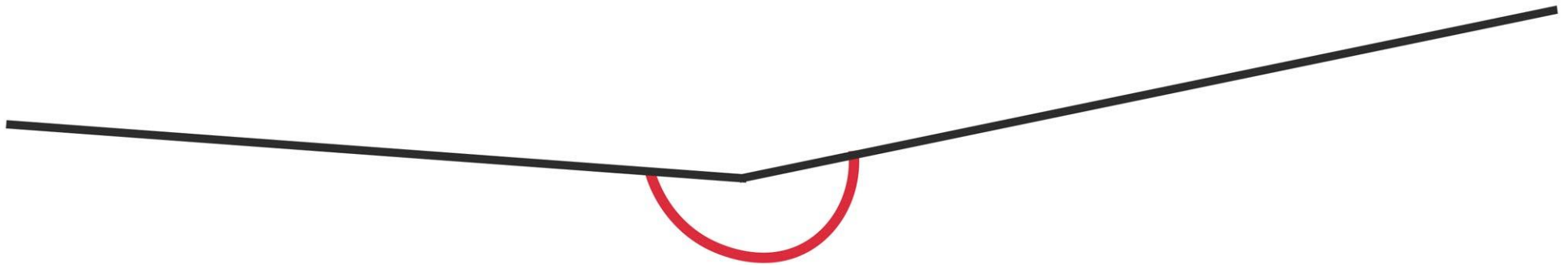
**Right angle, acute, obtuse, reflex or straight?**

**What kind of angle is this?**



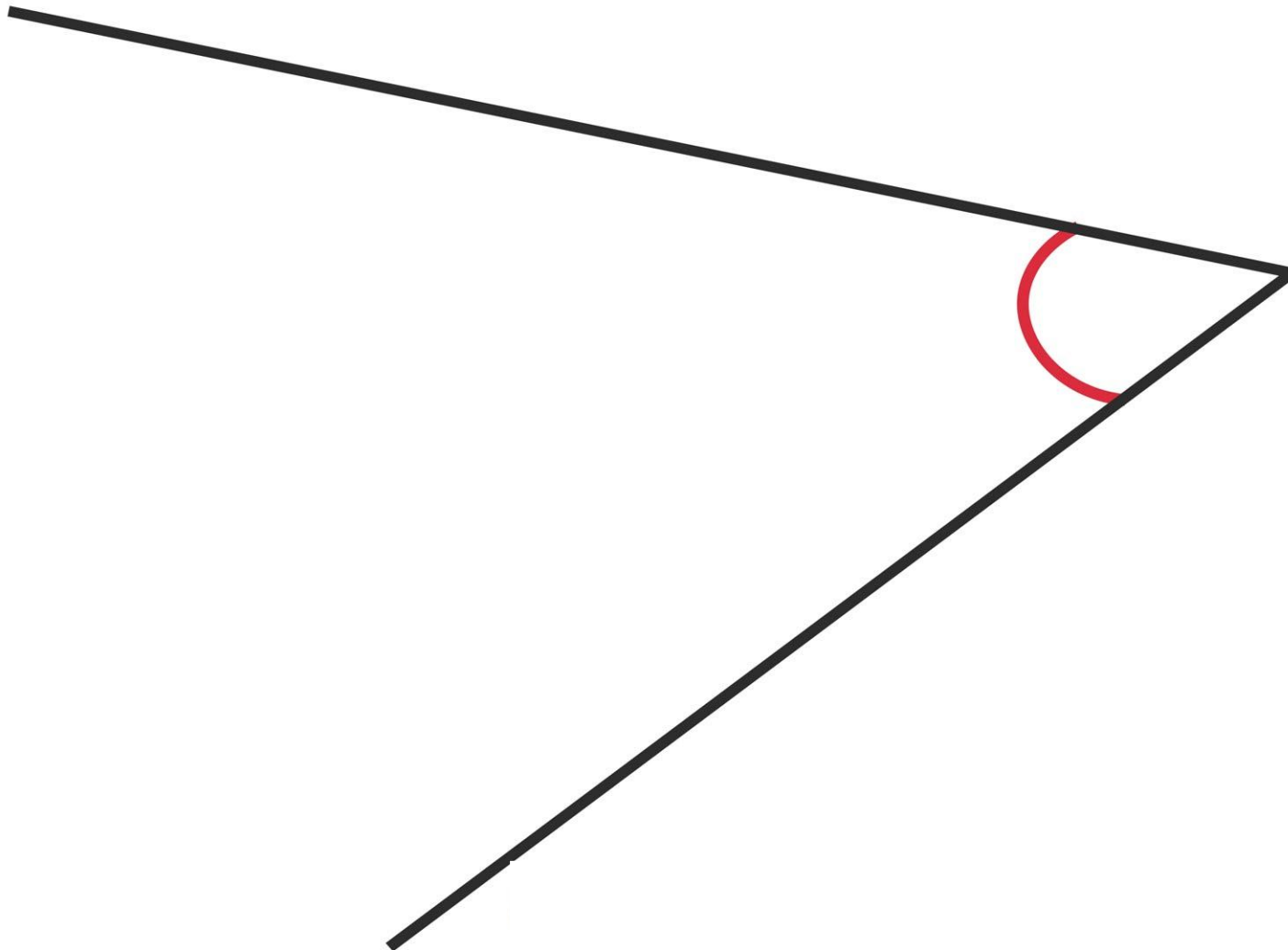
**Right angle, acute, obtuse, reflex or straight?**

**What kind of angle is this?**



**Right angle, acute, obtuse, reflex or straight?**

**What kind of angle is this?**

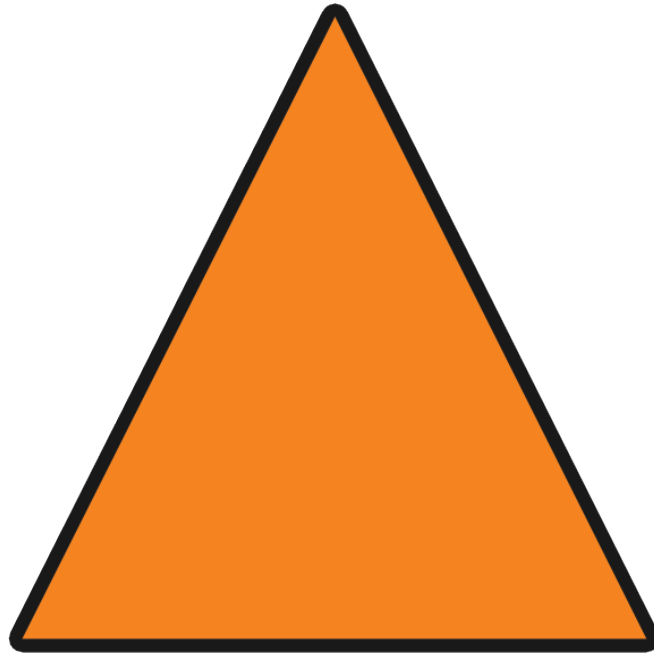


**Right angle, acute, obtuse, reflex or straight?**

**What kind of angle is this?**

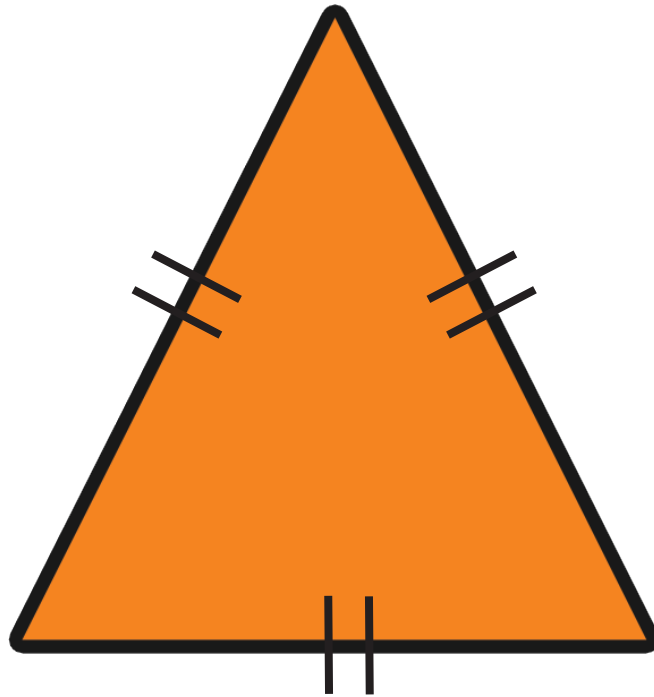


# Types of triangles



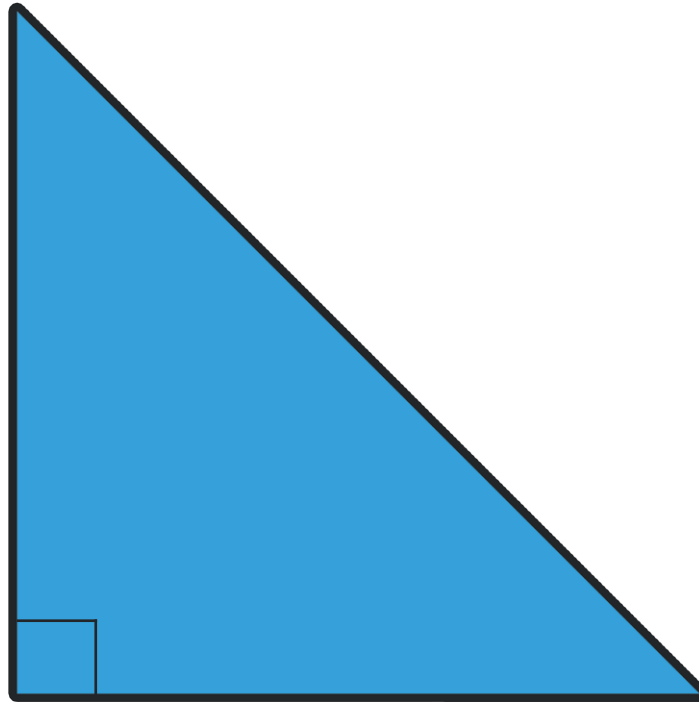
**equilateral**

# Types of triangles



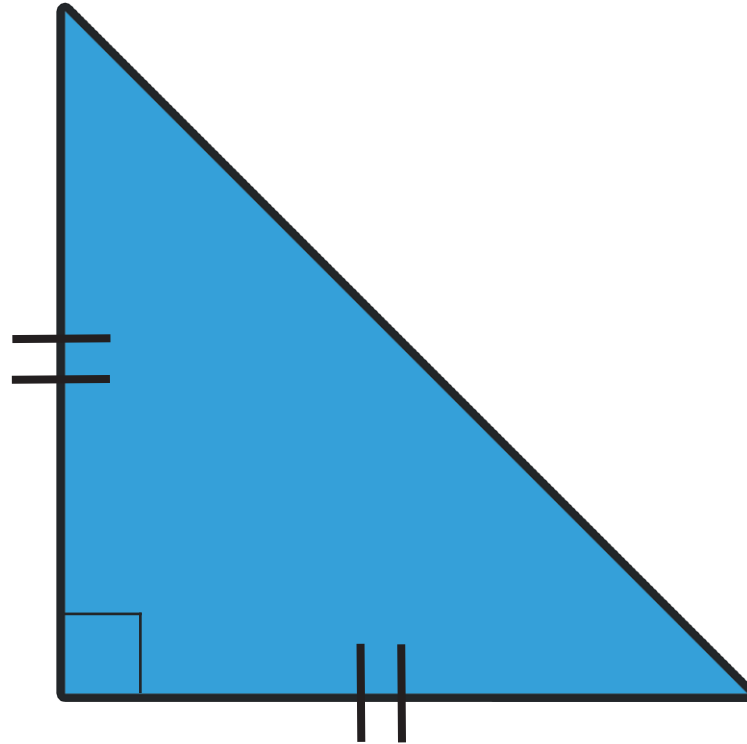
**equilateral**

## Types of triangles



**right-angled**

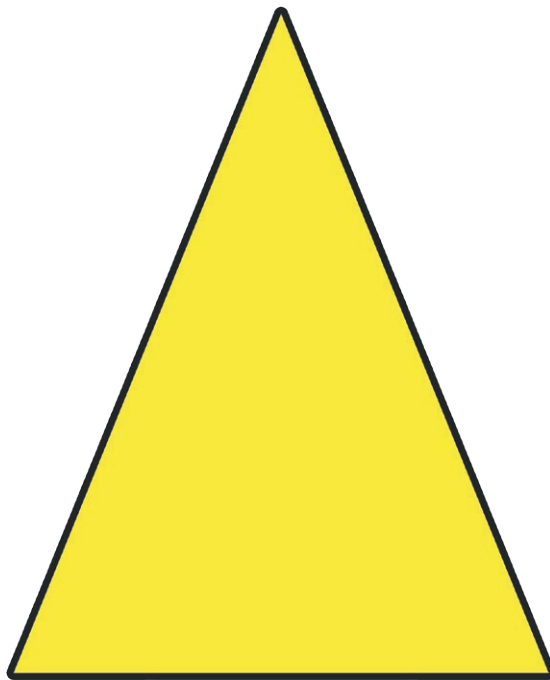
# Types of triangles



**right-angled**

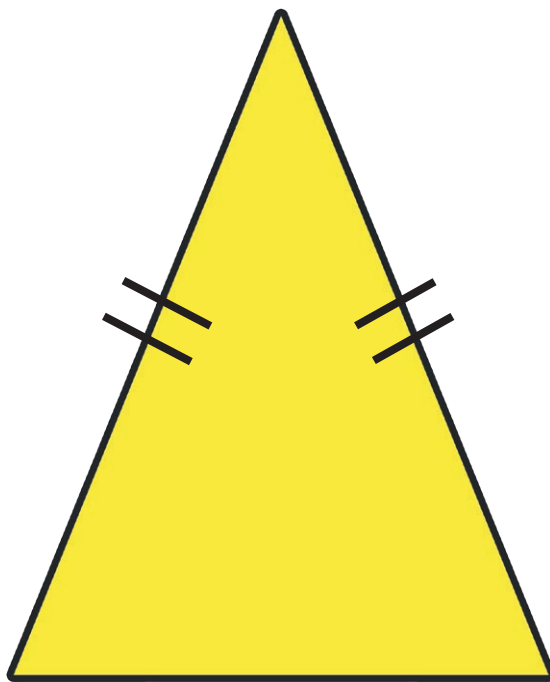


# Types of triangles



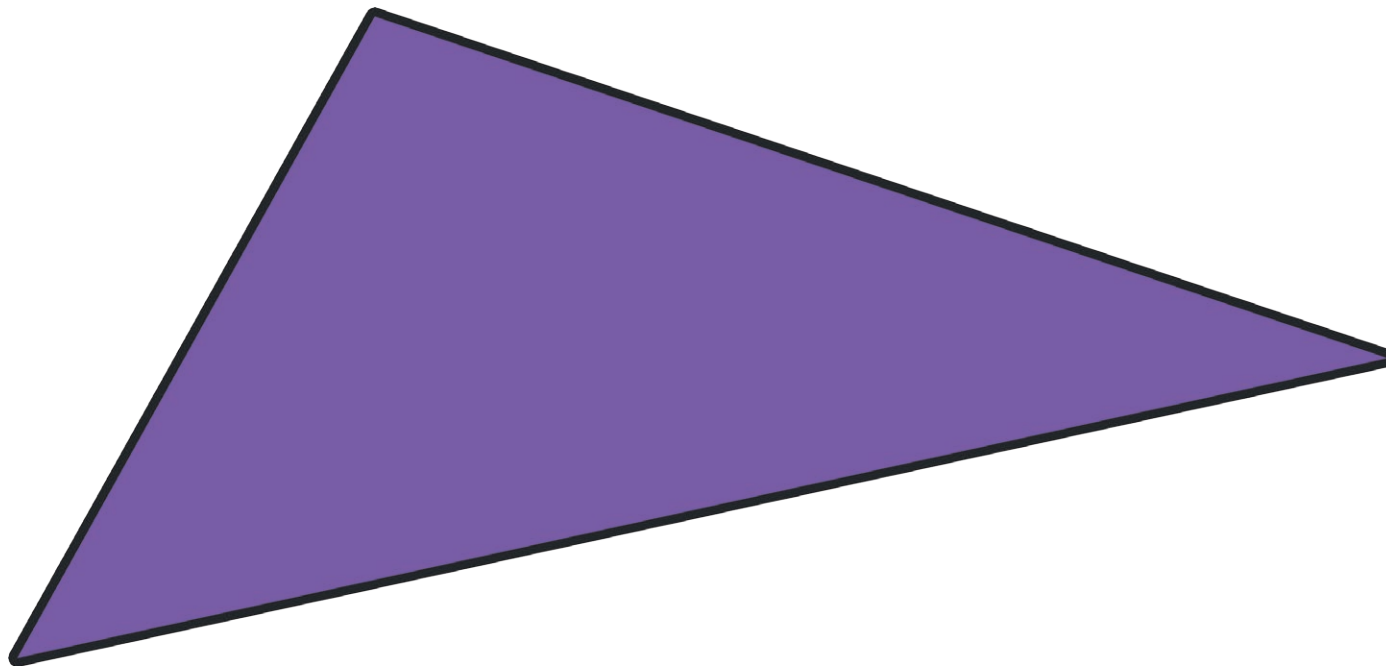
*isosceles*

# Types of triangles



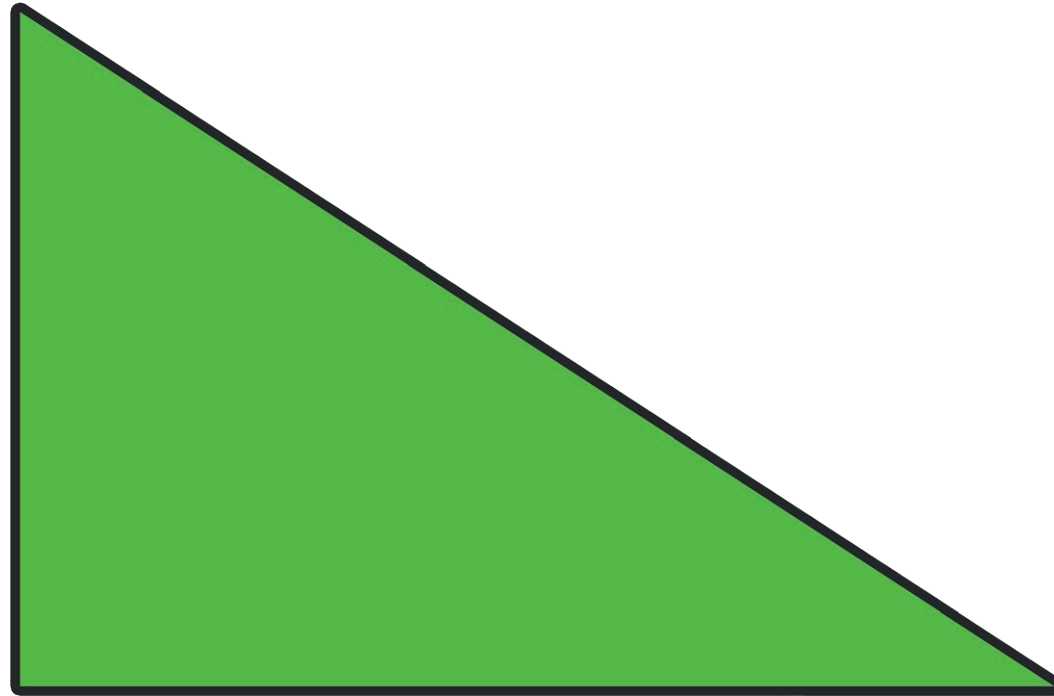
*isosceles*

# Types of triangles



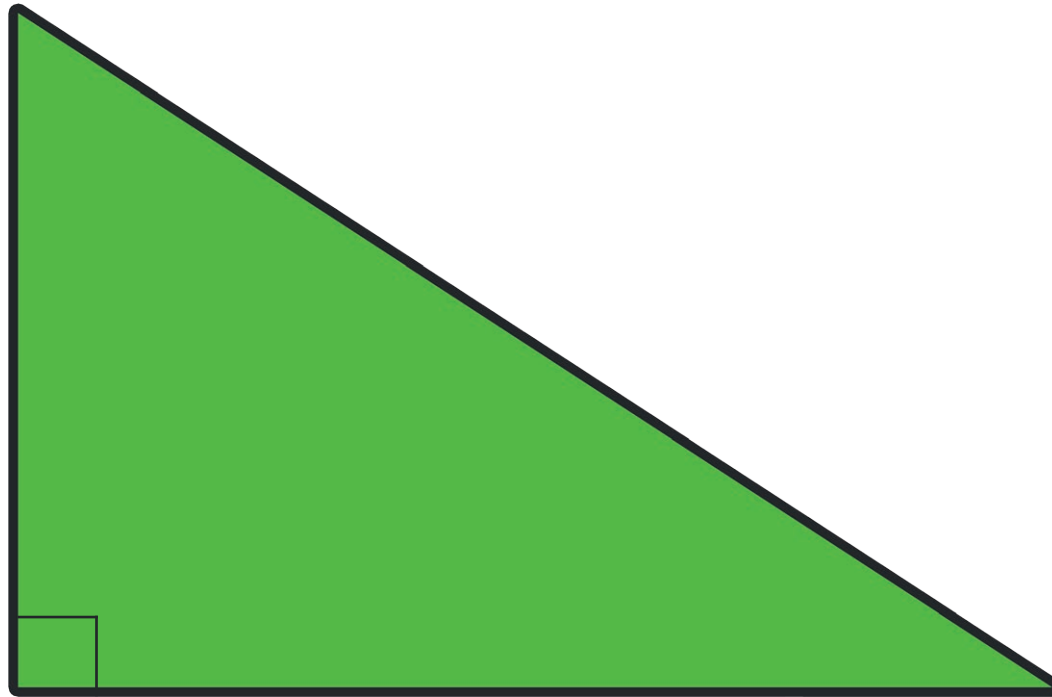
**scalene**

## Types of triangles



**right-angled scalene**

## Types of triangles



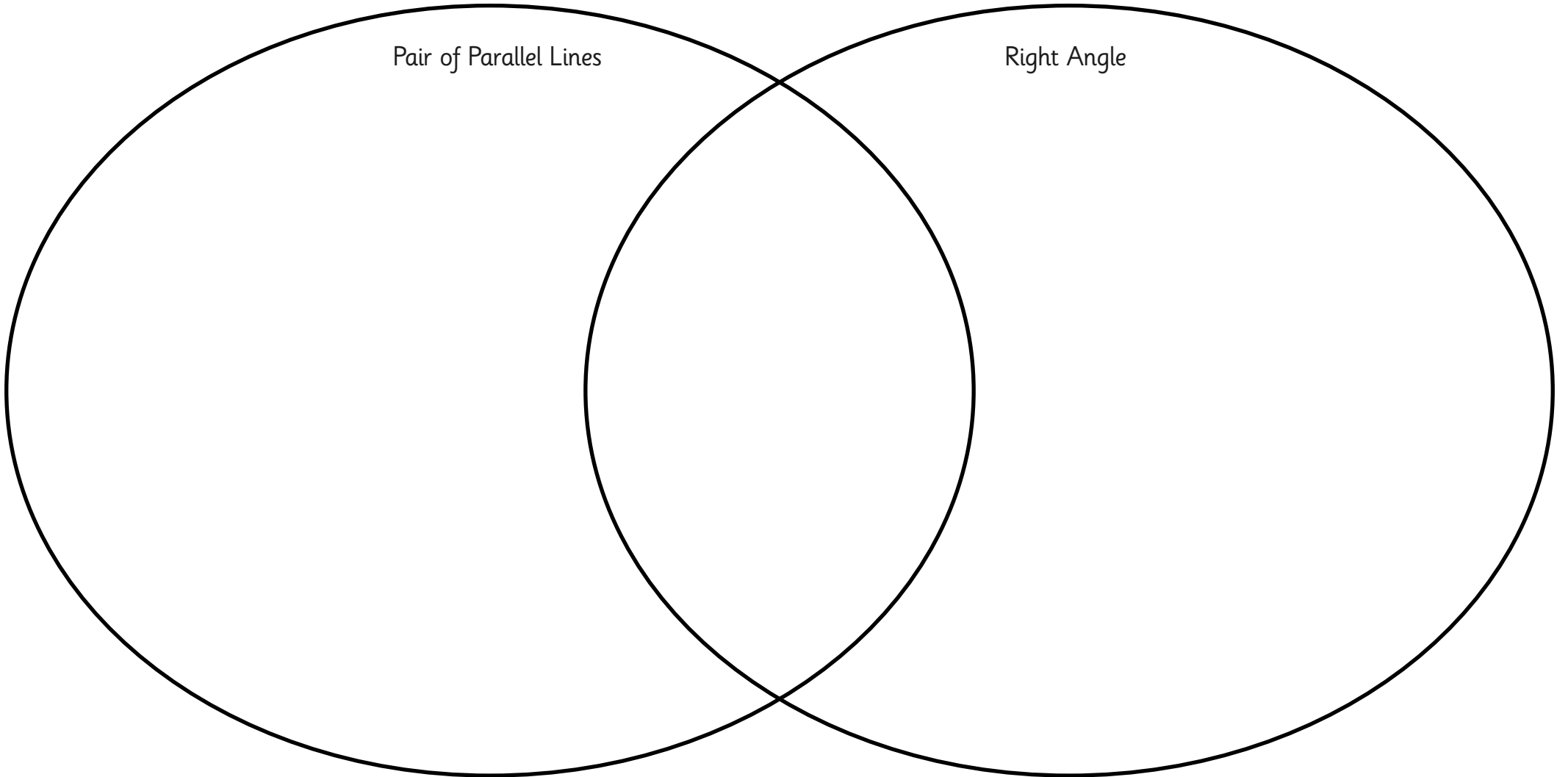
**right-angled scalene**

# Shape Sort

Sort the shapes into the correct place on the Venn diagram.

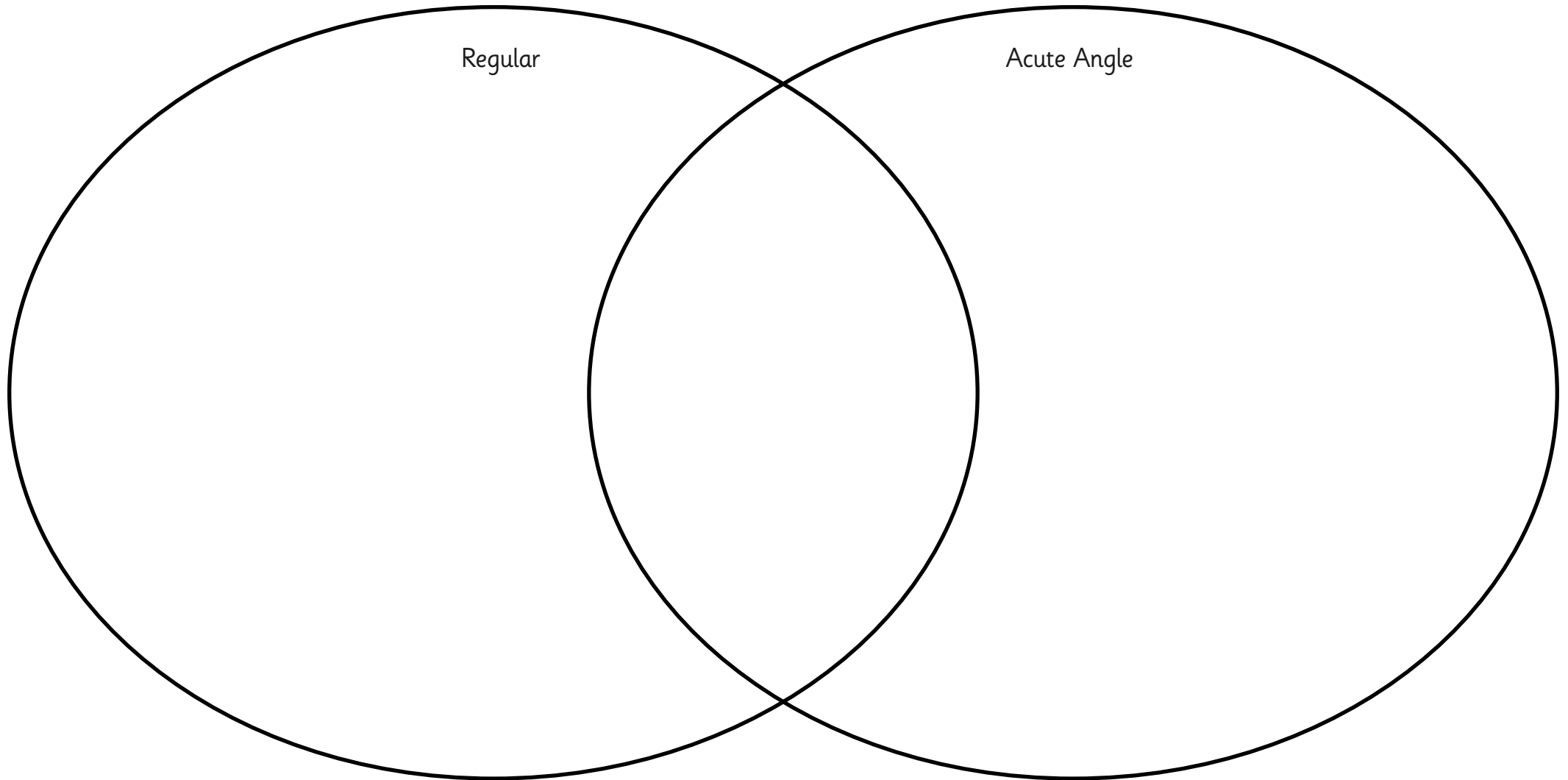
Pair of Parallel Lines

Right Angle



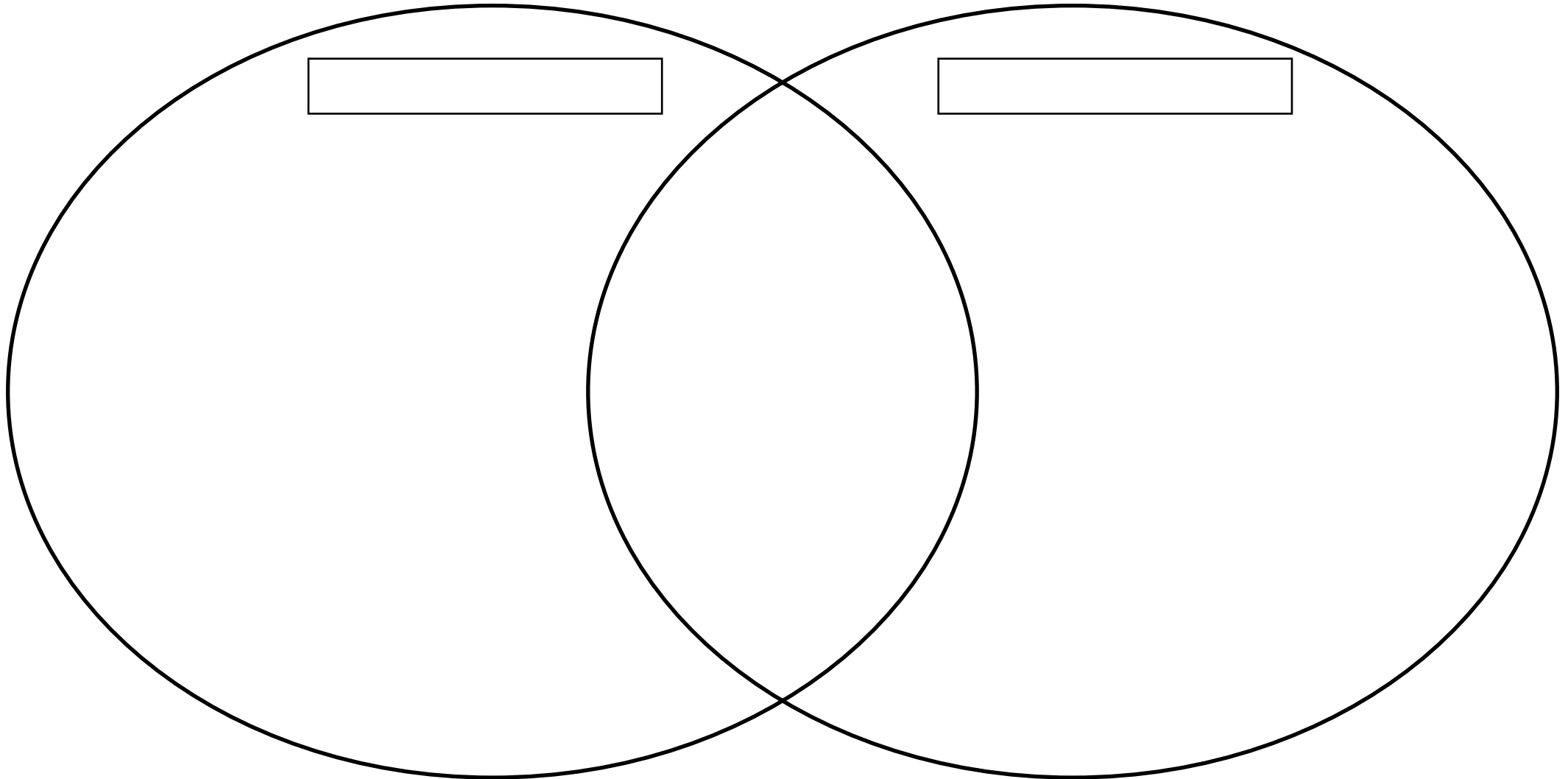
# Shape Sort

Sort the shapes into the correct place on the Venn diagram.

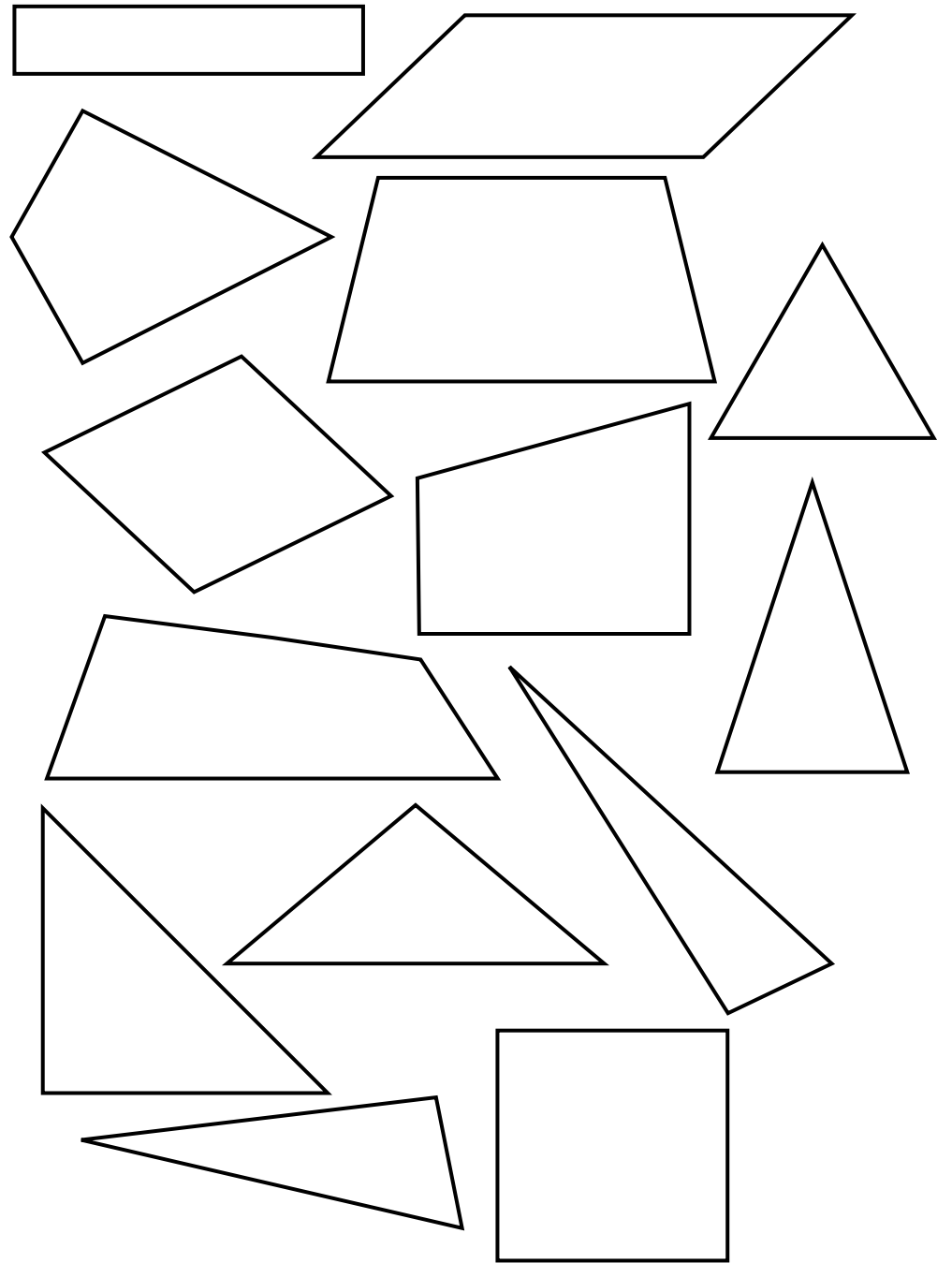
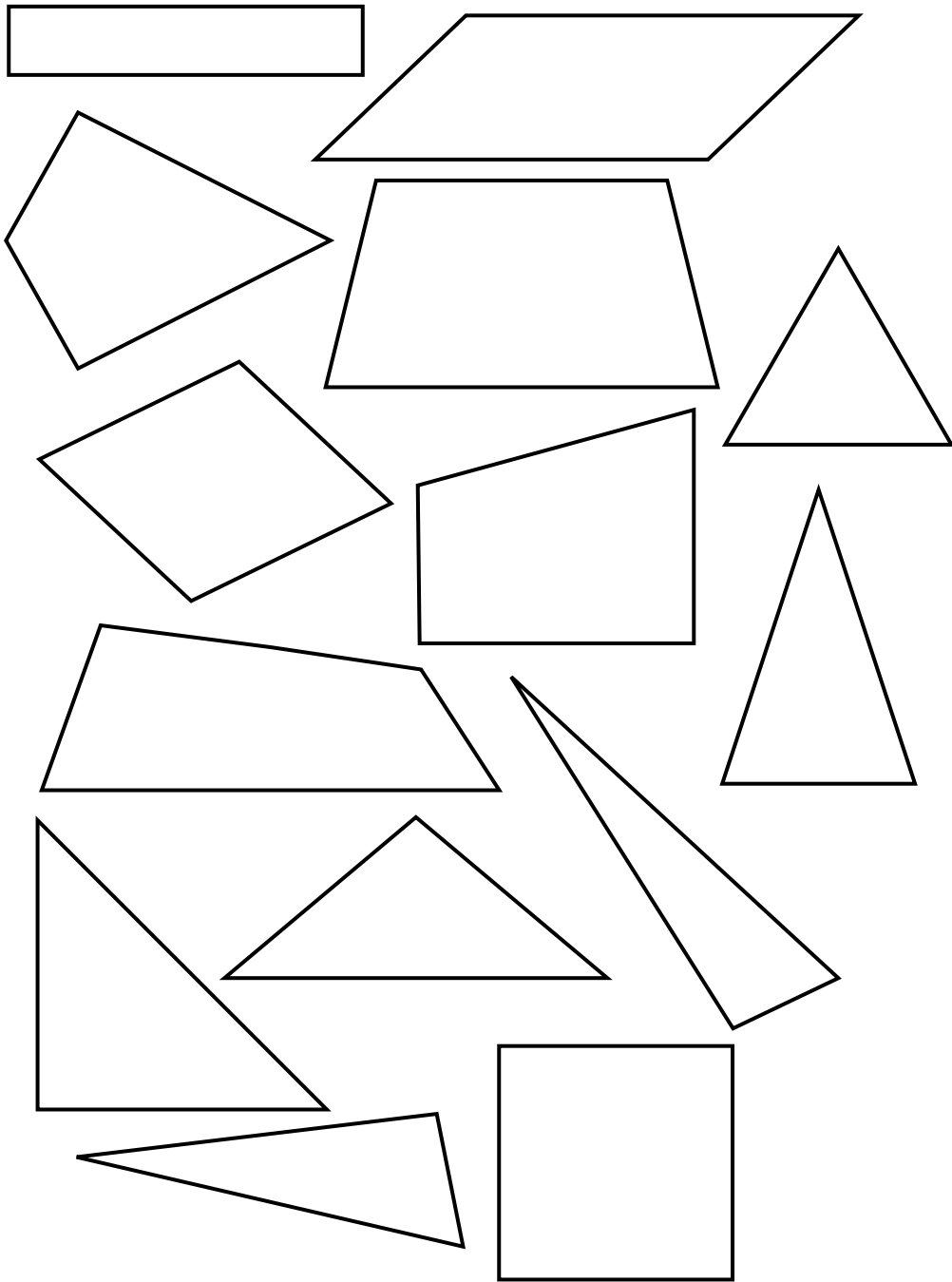


# Shape Sort

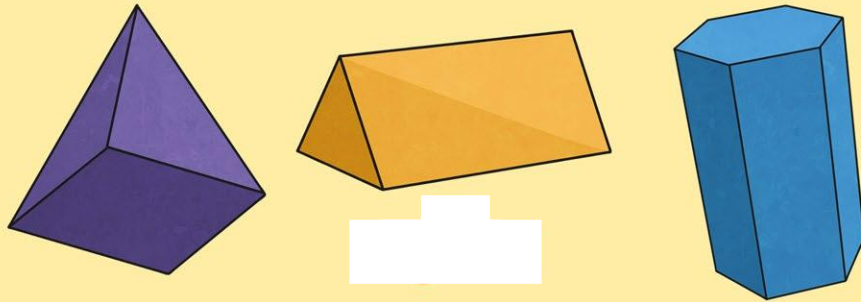
Sort the shapes into the correct place on the Venn diagram.



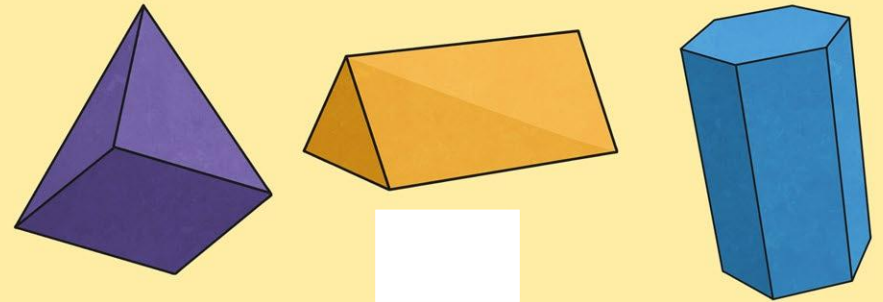




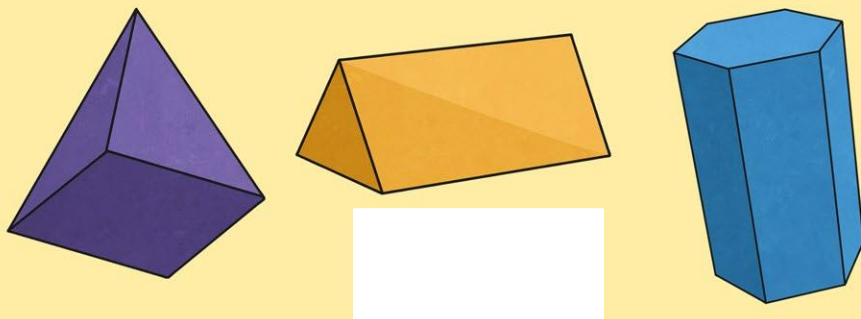
# Properties of Shapes Challenge Cards



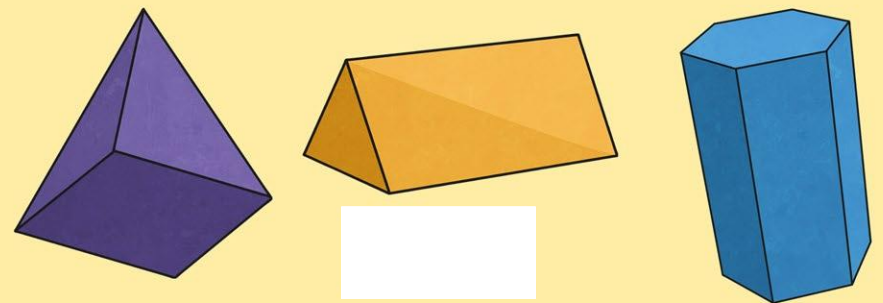
# Properties of Shapes Challenge Cards



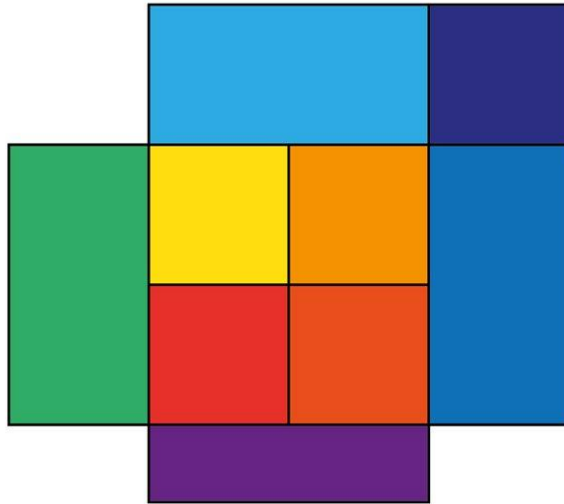
# Properties of Shapes Challenge Cards



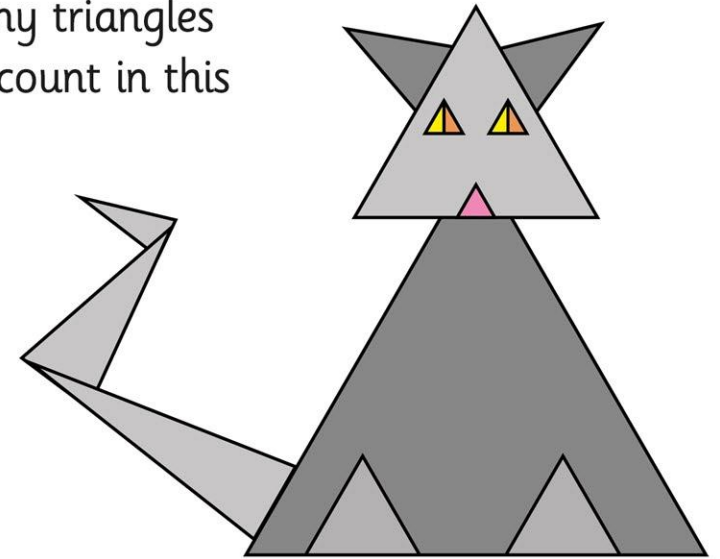
# Properties of Shapes Challenge Cards



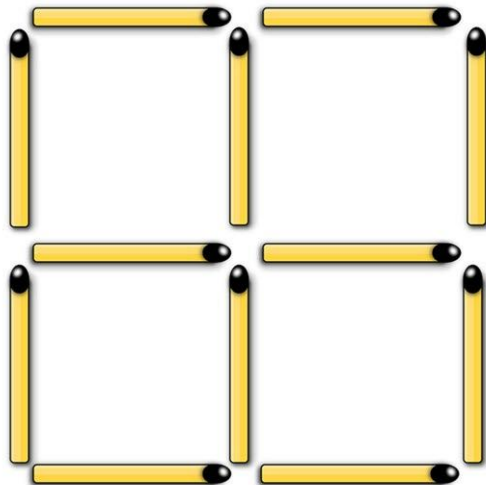
How many squares can you count in this picture?



How many triangles can you count in this picture?



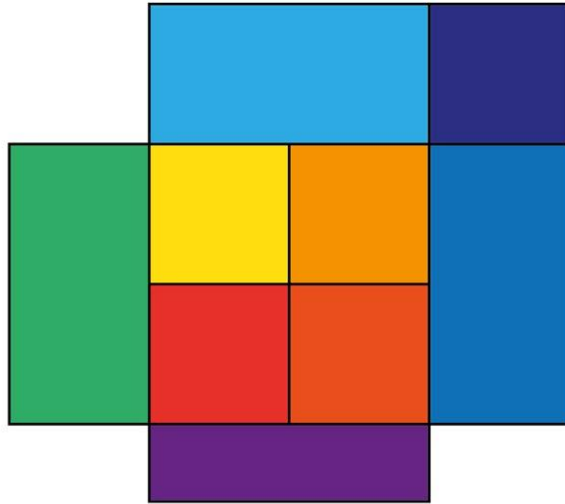
Can you move three of the match sticks to make 3 squares?



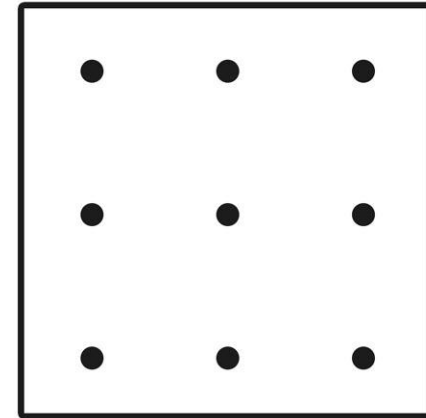
Write your name in capital letters.

Colour any **right angles** in blue.  
Colour any **acute angles** in green.  
Colour any **obtuse angles** in red.

How many right angles can you count in this picture?



Can you make 5 different 2D shapes on the peg board?



**Draw a 2D shape with:**

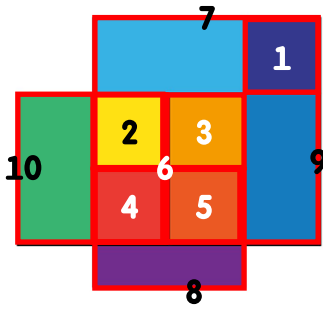
- 1 pair of parallel lines.
- 2 pairs of parallel lines.
- 1 pair of parallel lines.
- 1 pair of perpendicular lines.
- 3 pairs of parallel lines.

Write your name in capital letters.

Colour any **parallel lines in blue.**  
Colour any **perpendicular lines in green.**

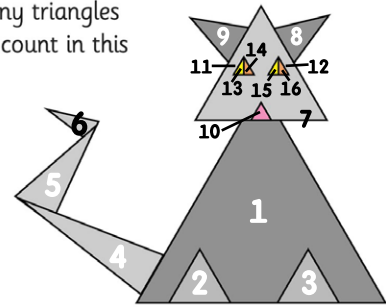
# Properties of Shapes Challenge Cards

How many squares can you count in this picture?



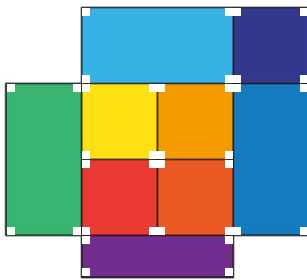
There are 10 squares.

How many triangles can you count in this picture?



There are 16 triangles.

How many right angles can you count in this picture?



There are 36 right angles.

**Draw a 2D shape with:**

- 1 pair of parallel lines.
- 2 pairs of parallel lines.
- 1 pair of parallel lines.
- 1 pair of perpendicular lines.
- 3 pairs of parallel lines.

Answers: trapezium, square, rectangle, parallelogram, rhombus, square or rectangle.

Can you move three of the match sticks to make 3 squares?

