



WELCOME

we're glad you're here



LET

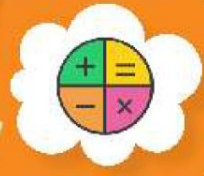
the

ADVENTURE

Begin

Chapter 4

Mathematics and Geometry





Pirates of the Carribbean

Lines are fundamental elements in geometry, characterized by their length and direction.



length

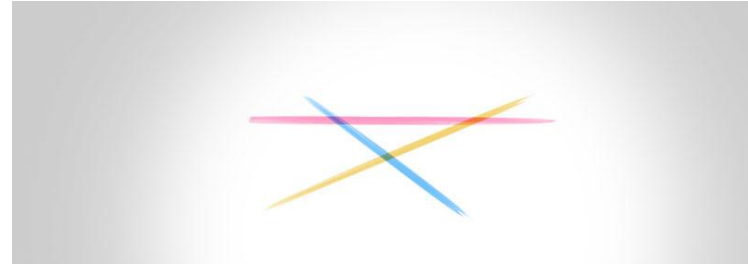


direction



Here are some common types of lines:

Straight line



A line that extends definitely in both directions and does not curve.

Straight line



Curved line



A curved line is a type of line that **does not** follow a **straight path**.

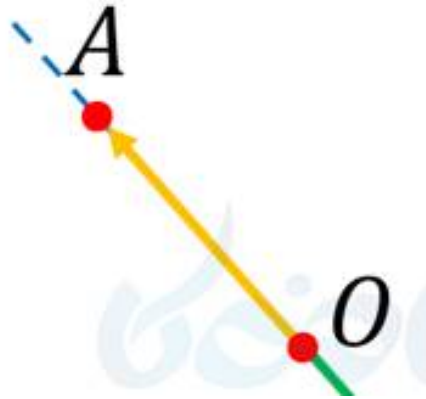
Curved line



A part of a line that has one endpoint and extends infinitely in one direction.

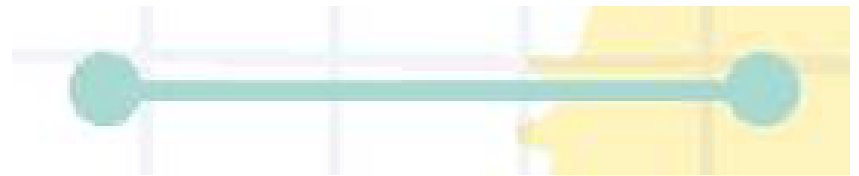


Line Segment



A type of line that has two endpoints.

Line Segment



Parallel lines



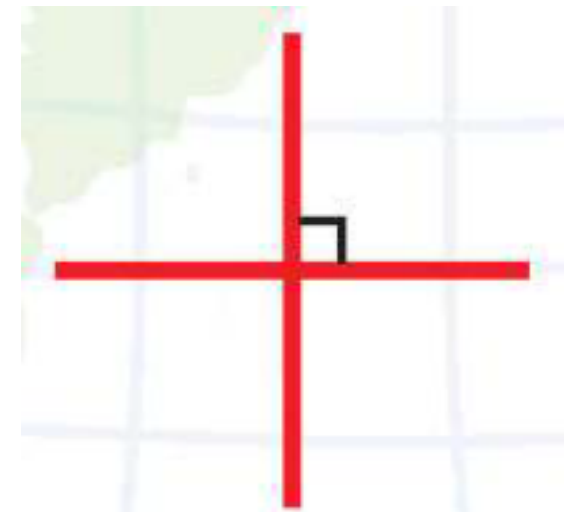
Lines in a same plane that do not intersect. They remain equidistant from each other at all points.

Parallel lines



Perpendicular lines

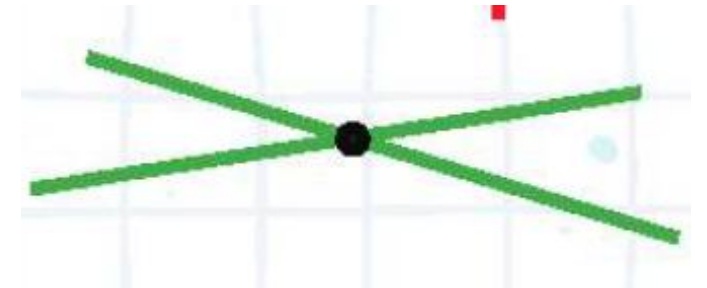
Lines that intersect at a right angle (90 degrees).



Intersecting
lines

Lines that cross or meet at a common point.

Intersecting
lines





Pirates of the Caribbean

Lines are fundamental elements in geometry, characterized by their length and direction. Here are some common types of lines:

Straight Line:

A line that extends indefinitely in both directions and does not curve.



Curved line:

A curved line is a type of line that does not follow a straight path.



Ray:

A part of a line that has one endpoint and extends infinitely in one direction.



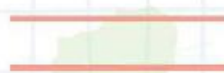
Line Segment:

A part of a line that has two endpoints.



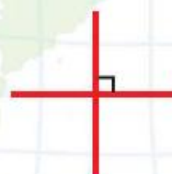
Parallel Lines:

Lines in the same plane that do not intersect. They remain equidistant from each other at all points.



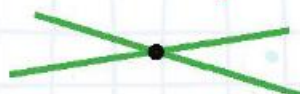
Perpendicular Lines:

Lines that intersect at a right angle (90 degrees).

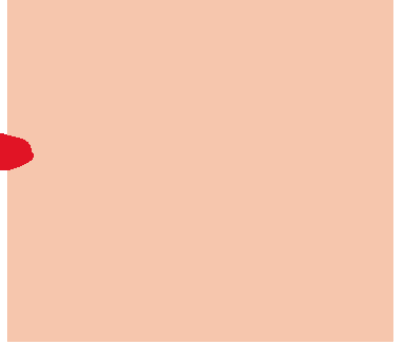
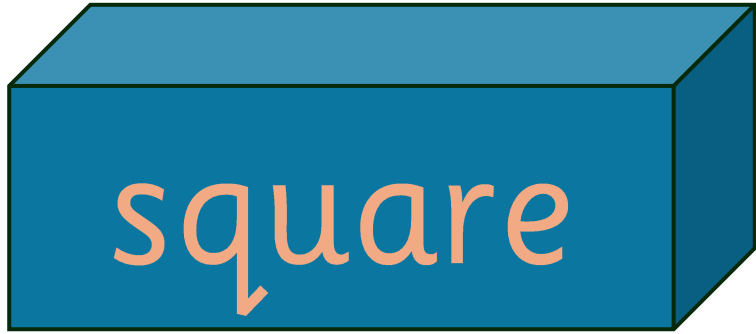


Intersecting Lines:

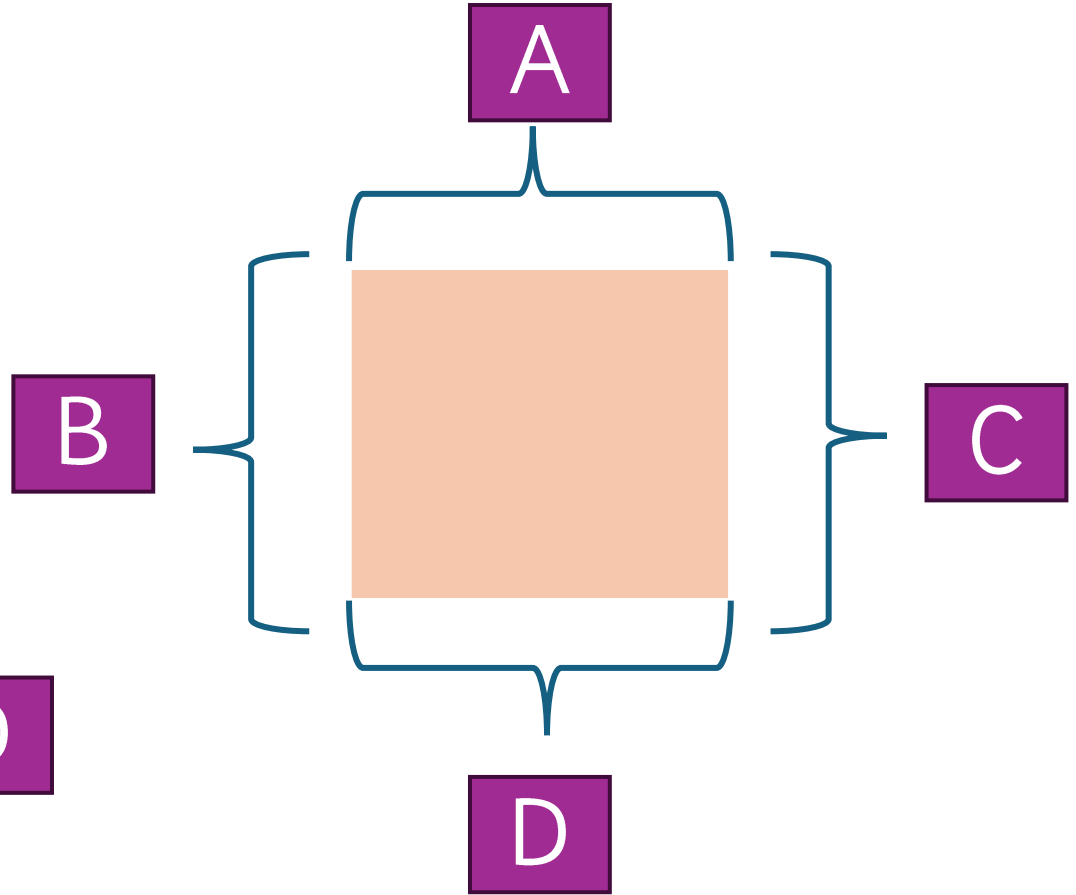
Lines that cross or meet at a common point.



Common 2D shapes

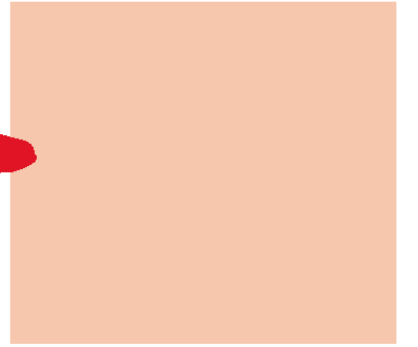
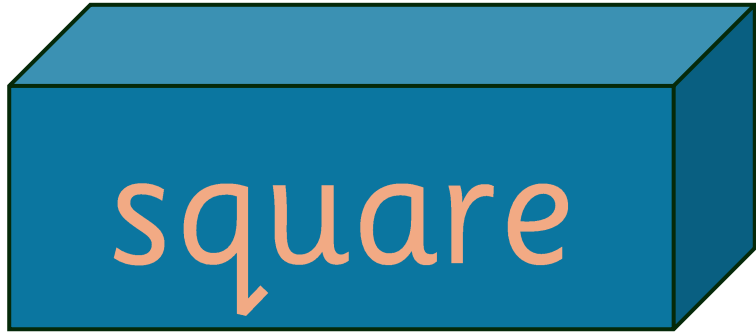


1) All sides are equal in length.

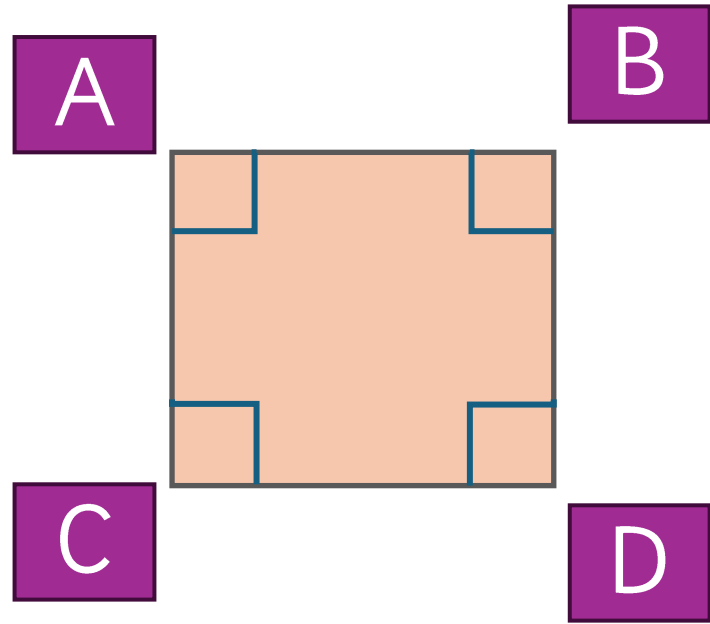


$$A = B = C = D$$

Common 2D shapes

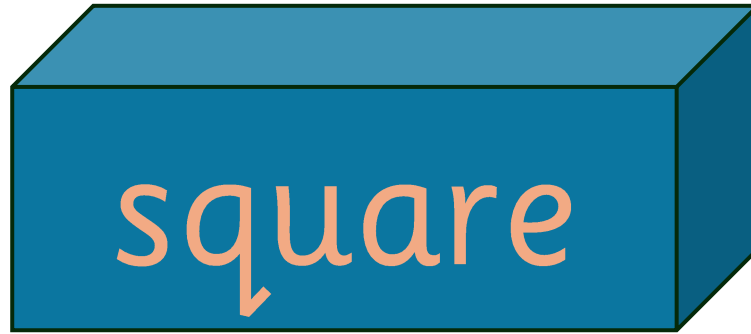


2) All angles are **right angles**. (90 degrees.)



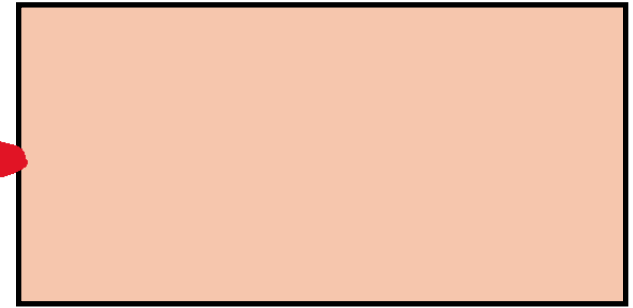
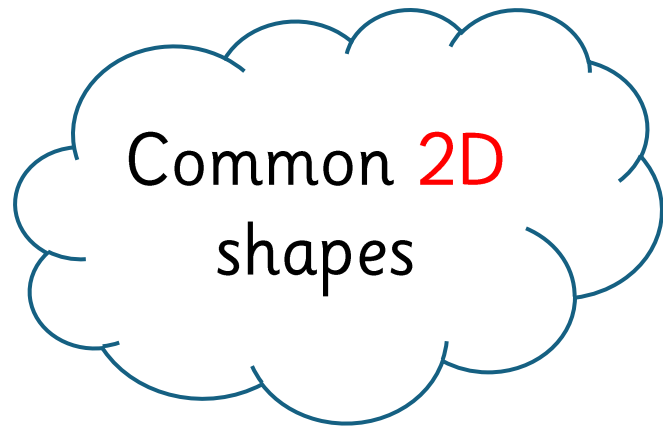
$$A = B = C = D = 90 \text{ degrees}$$

Common 2D
shapes



3) Opposite sides are parallel and equal in length.



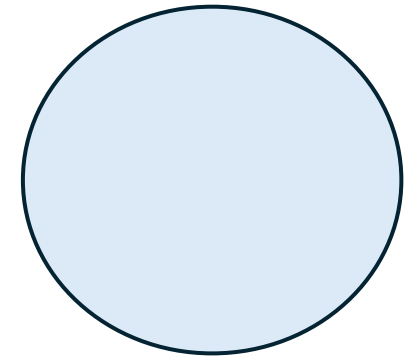
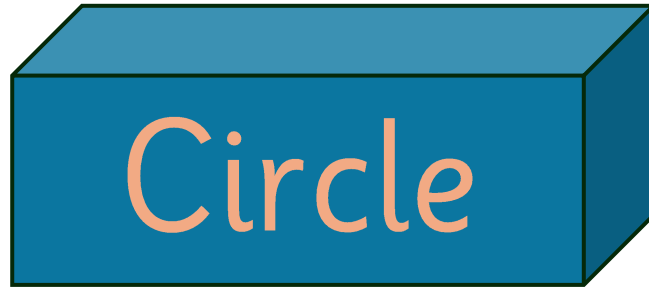
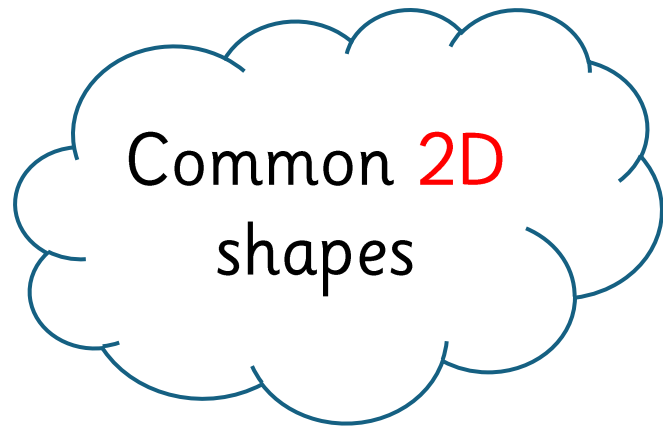


1) Opposite sides are **equal** in length.

2) All angles are **right angles**. (90 degrees.)

3) **Opposite** sides are **parallel**.



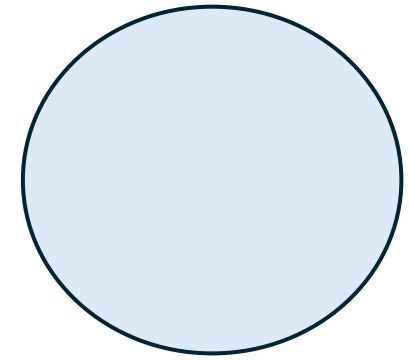
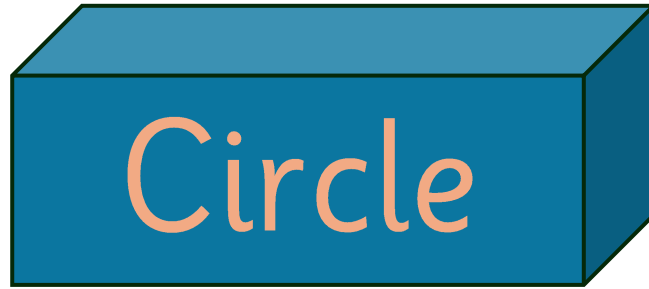
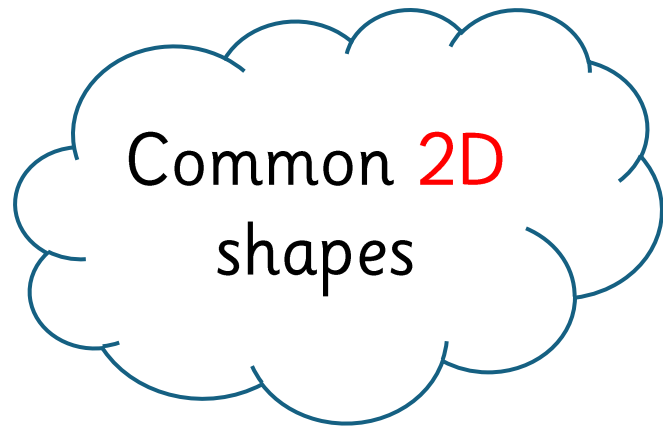


1) No **straight** sides; consists of **curved** boundary.

2) No **angles**.

3) All **points** on the **boundary** are **equidistant** from the **centre**.



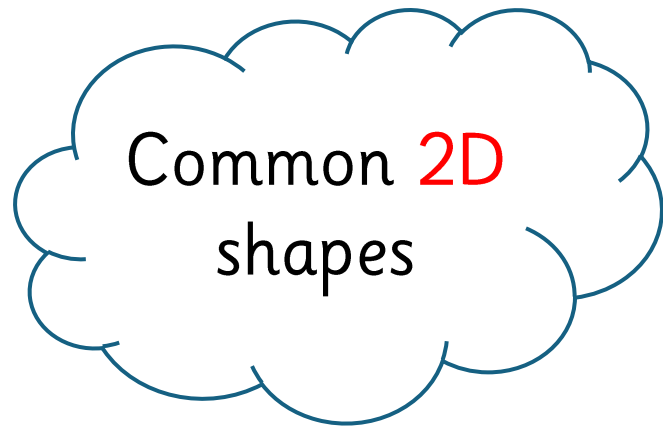


1) No **straight** sides; consists of **curved** boundary.

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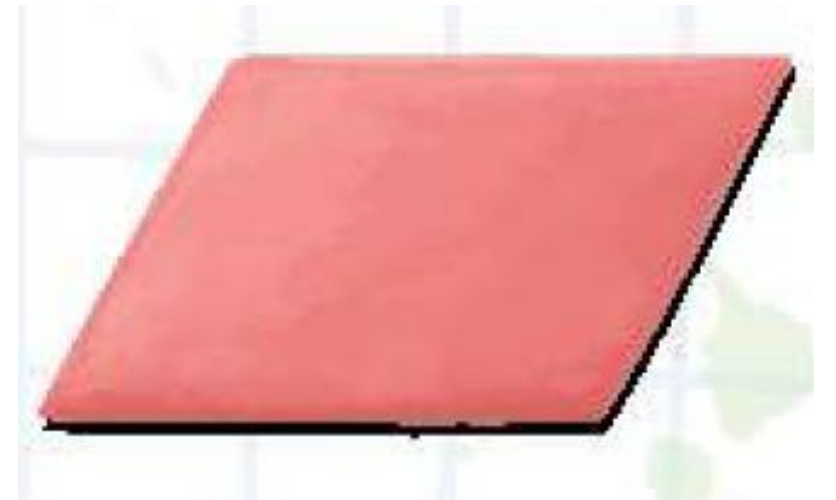


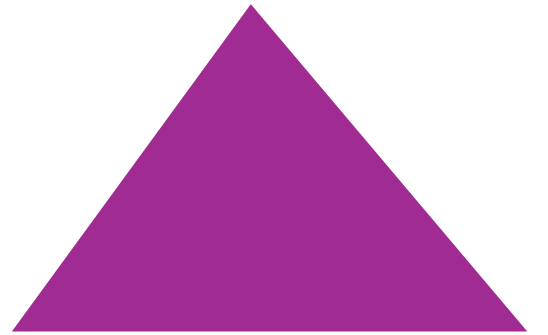
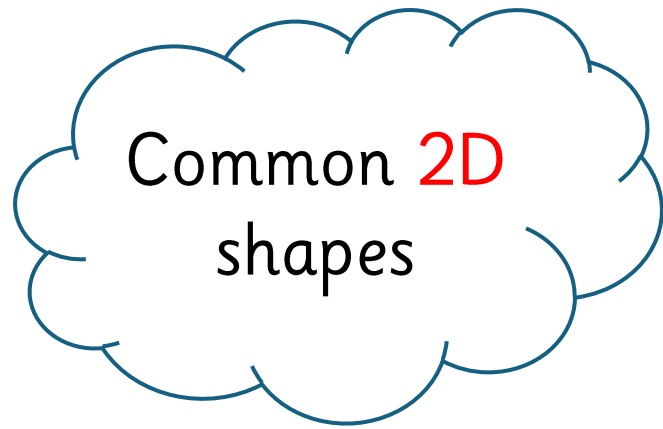


1) **Opposite** sides are **equal** in **length**.

2) **Opposite** angles are **equal**.

3) **Opposite** sides are **parallel**.



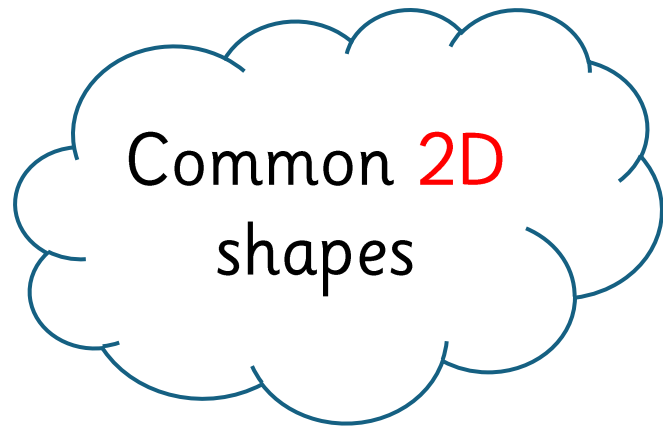


1) Three sides.

2) Three angles.

3) The sum of interior angles is always 180.





1) At least **one pair** of **parallel** sides.

2) **All sides** are not **equal** in **length**. (Unless it's **isosceles** trapezoid.)





Common 2D Shapes

Square

- All sides are equal in length.
- All angles are right angles (90 degrees).
- Opposite sides are parallel and equal in length.



Rectangle:

- Opposite sides are equal in length.
- All angles are right angles (90 degrees).
- Opposite sides are parallel.



Circle:

- No straight sides; consists of a curved boundary.
- No angles.
- All points on the boundary are equidistant from the center.



Parallelogram:

- Opposite sides are equal in length.
- Opposite angles are equal.
- Opposite sides are parallel.



Triangle:

- Three sides.
- Three angles.
- The sum of interior angles is always 180 degrees.



Trapezoid

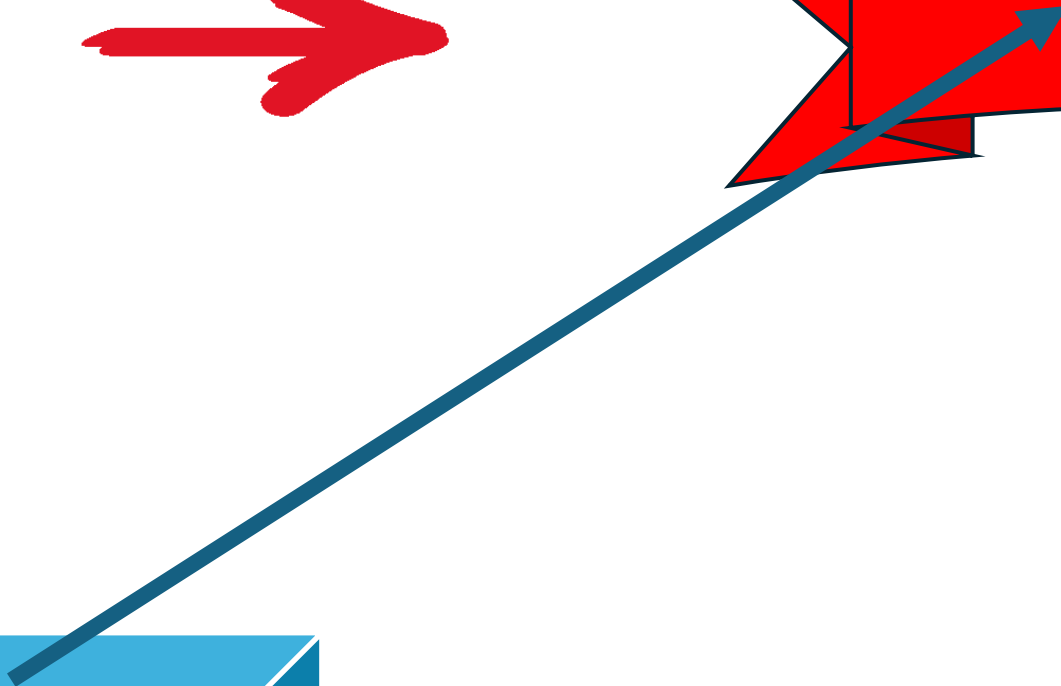
- At least one pair of parallel sides.
- No sides are equal in length (unless it's an isosceles trapezoid).



Common 3D
shapes



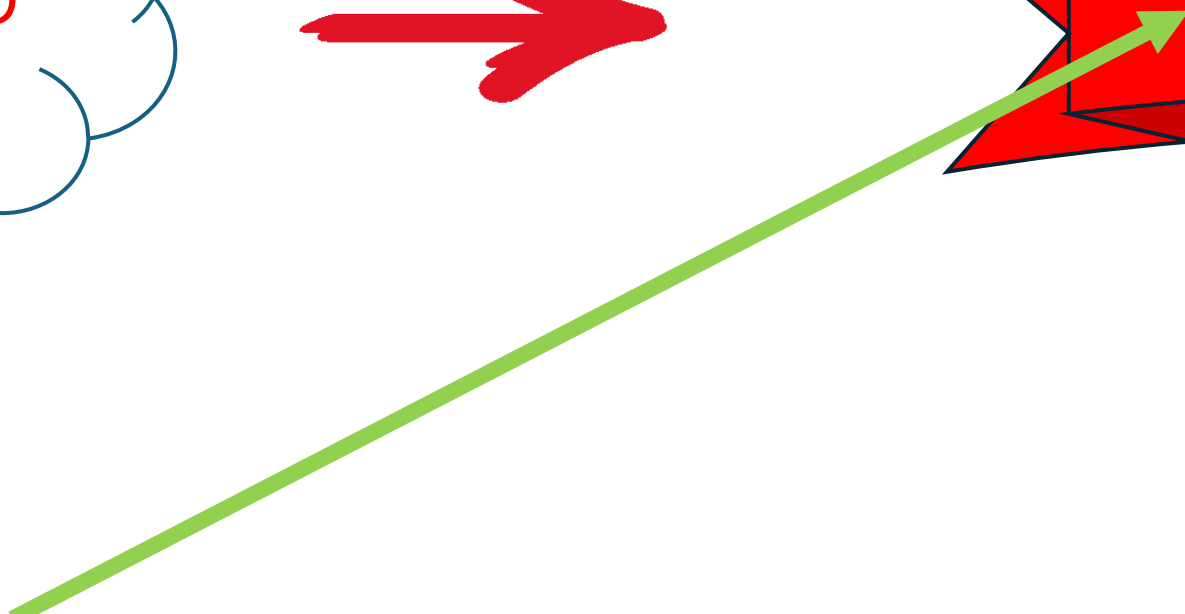
face



Common 3D
shapes



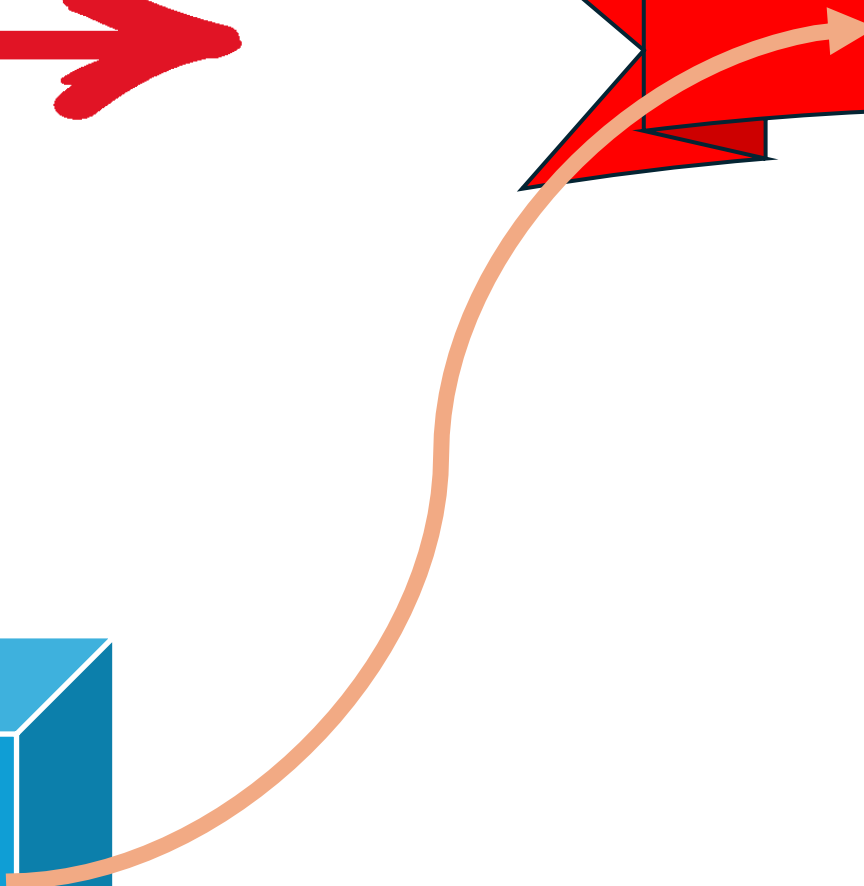
vertex



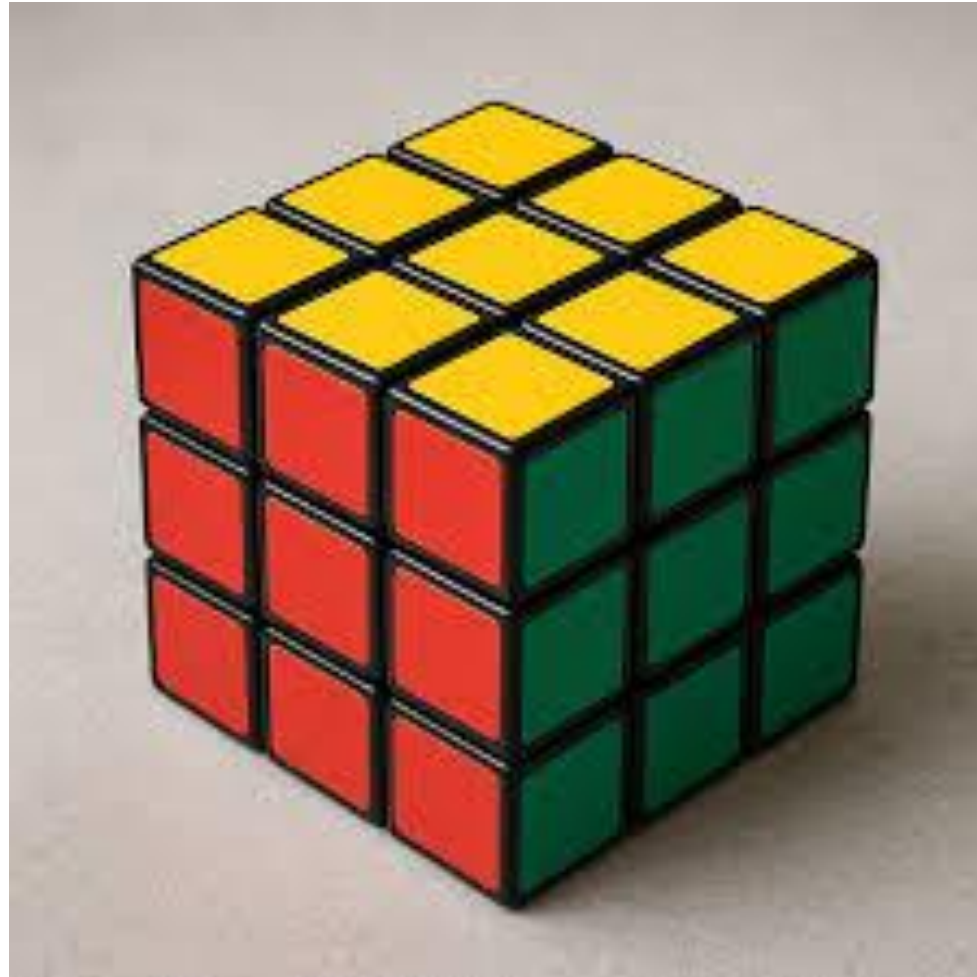
Common 3D
shapes



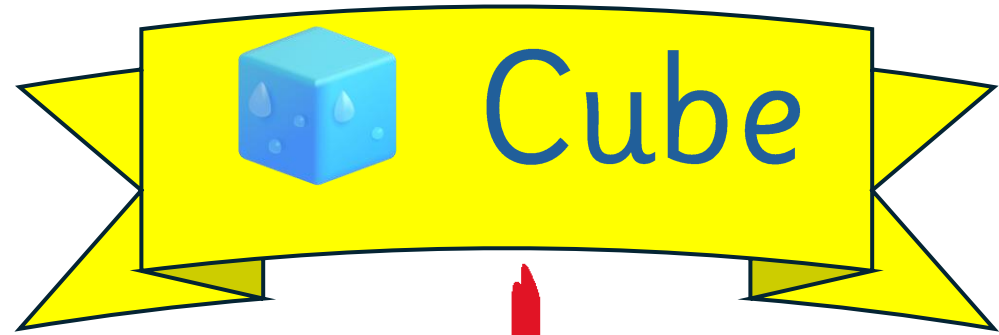
edge



What is this shape?



Common 3D
shapes



All faces are squares.

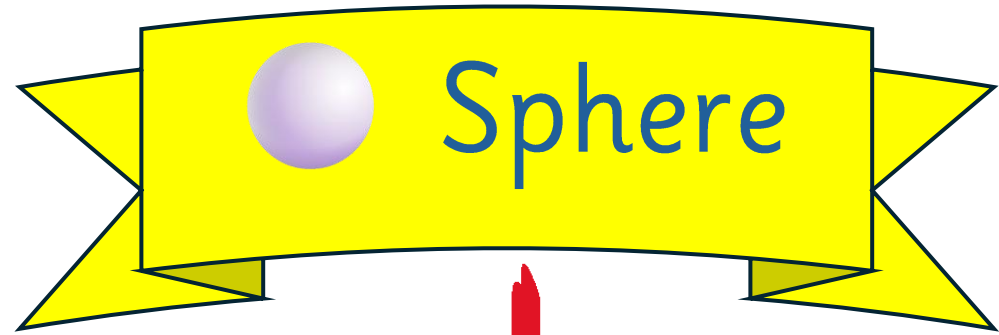
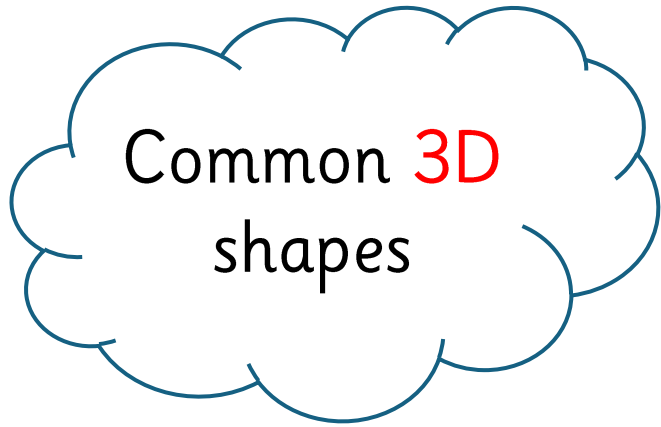
All edges are equal in length.

All angles are right angles.



What is this shape?





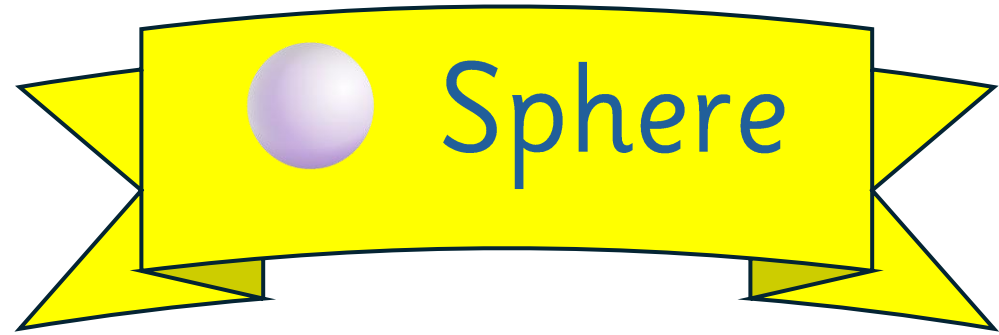
A perfectly round shape.

No edges or vertices.

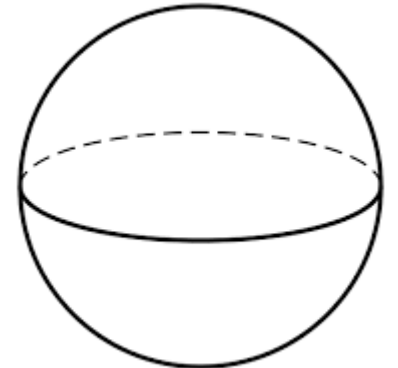
All points on the surface are equidistant from the center.



Common 3D
shapes



All points on the surface are
equidistant from the center.



What are these shapes?



What are these shapes?

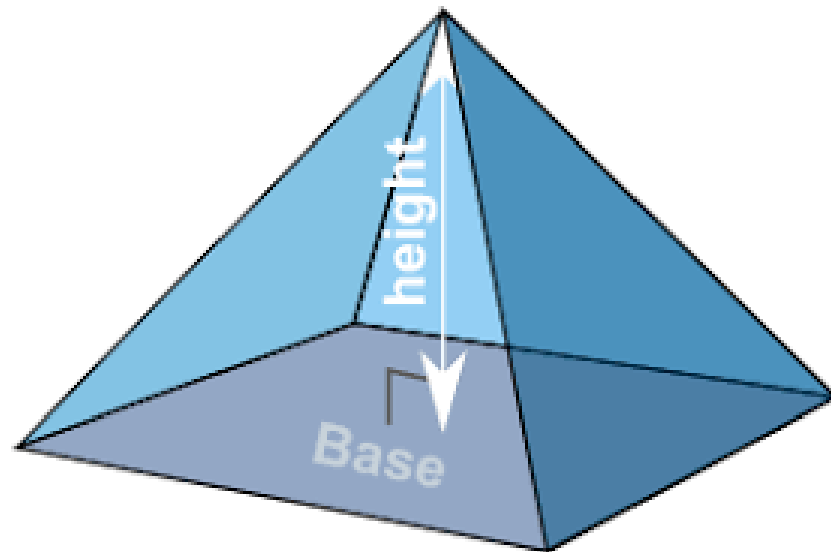


Common **3D**
shapes

▲ Pyramid (with a square base)

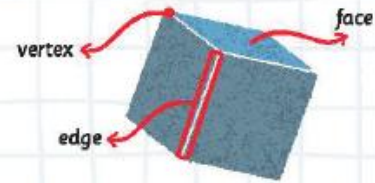
Five faces.

Five vertices.





Common 3D Shapes



Cube:

- ✎ All faces are squares.
- ✎ All edges are equal in length.
- ✎ All angles are right angles.



Sphere:

- ✎ A perfectly round shape.
- ✎ No edges or vertices.
- ✎ All points on the surface are equidistant from the center.



Cylinder:

- ✎ No vertices.
- ✎ Two circular faces.



Pyramid (with a square base):

- ✎ Five faces.
- ✎ Five vertices.



How to Read
Fractions in
English



Fraction**How to read it**

 $\frac{1}{2}$

half / one half

 $\frac{1}{3}$

a third / one third

 $\frac{1}{4}$

a quarter / one quarter

 $\frac{1}{5}$

one fifth

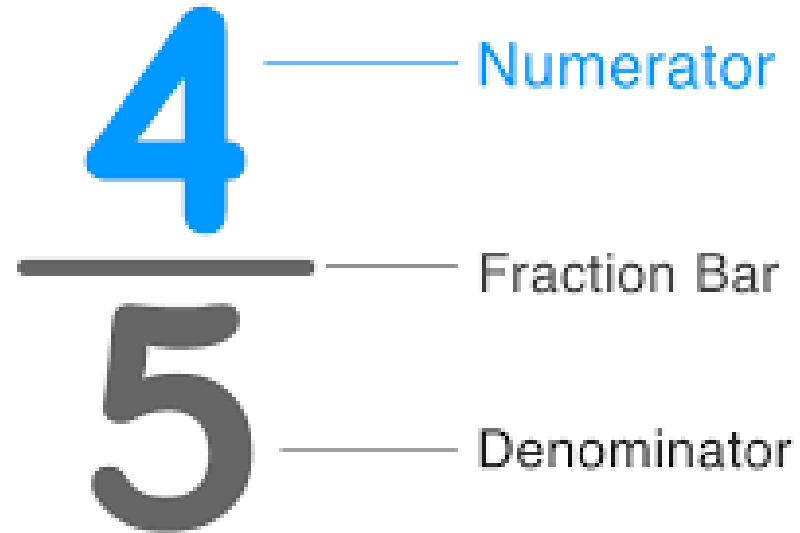
 $\frac{2}{3}$

two thirds

 $\frac{3}{7}$

three sevenths

Numerator



cardinal number (one, two, three...)

Numerator (top number)

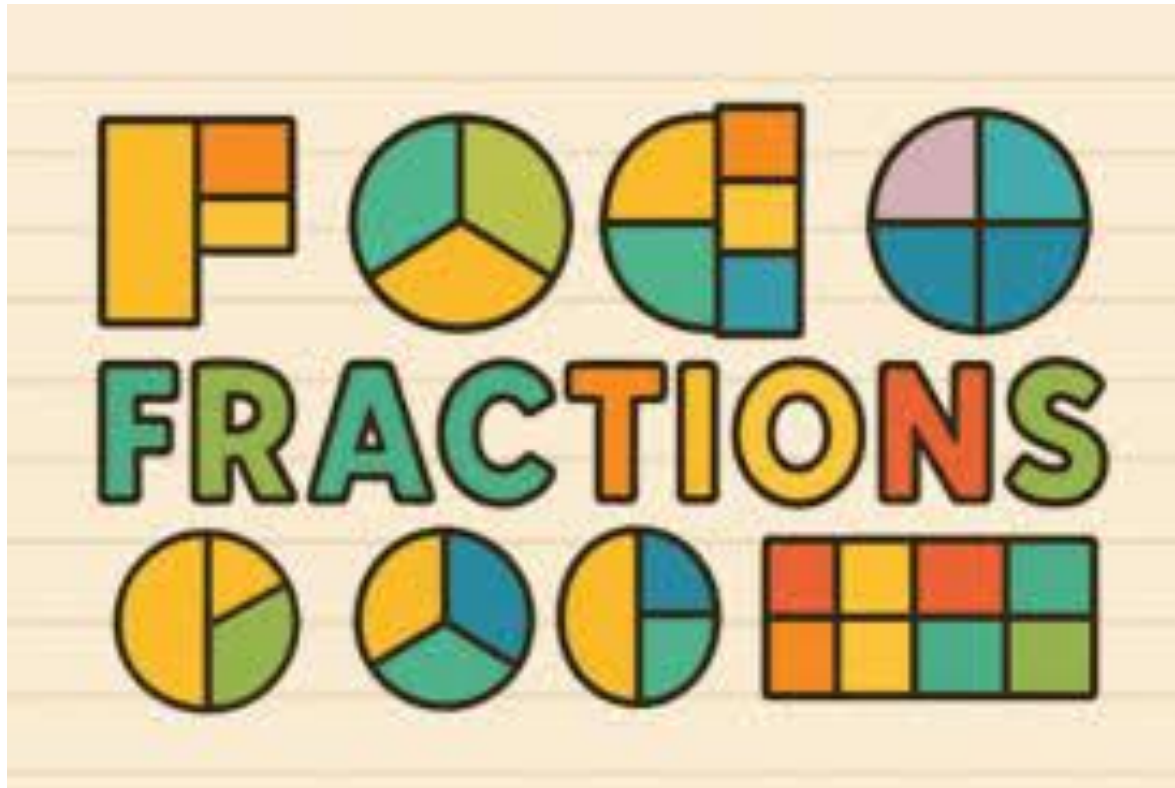
Common Denominator

$$\frac{2}{9} \quad \frac{5}{9} \quad \frac{8}{9}$$

MATH
MONKS

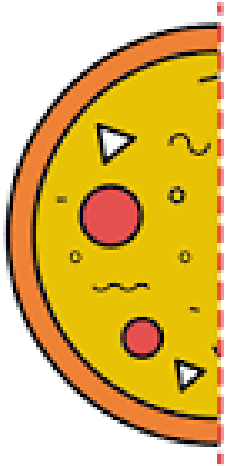
ordinal number (third, fourth, fifth...)

Denominator (bottom number)

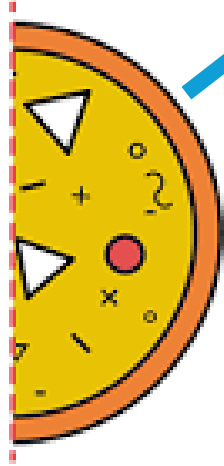


This is how we read the fractions:

$\frac{1}{2}$

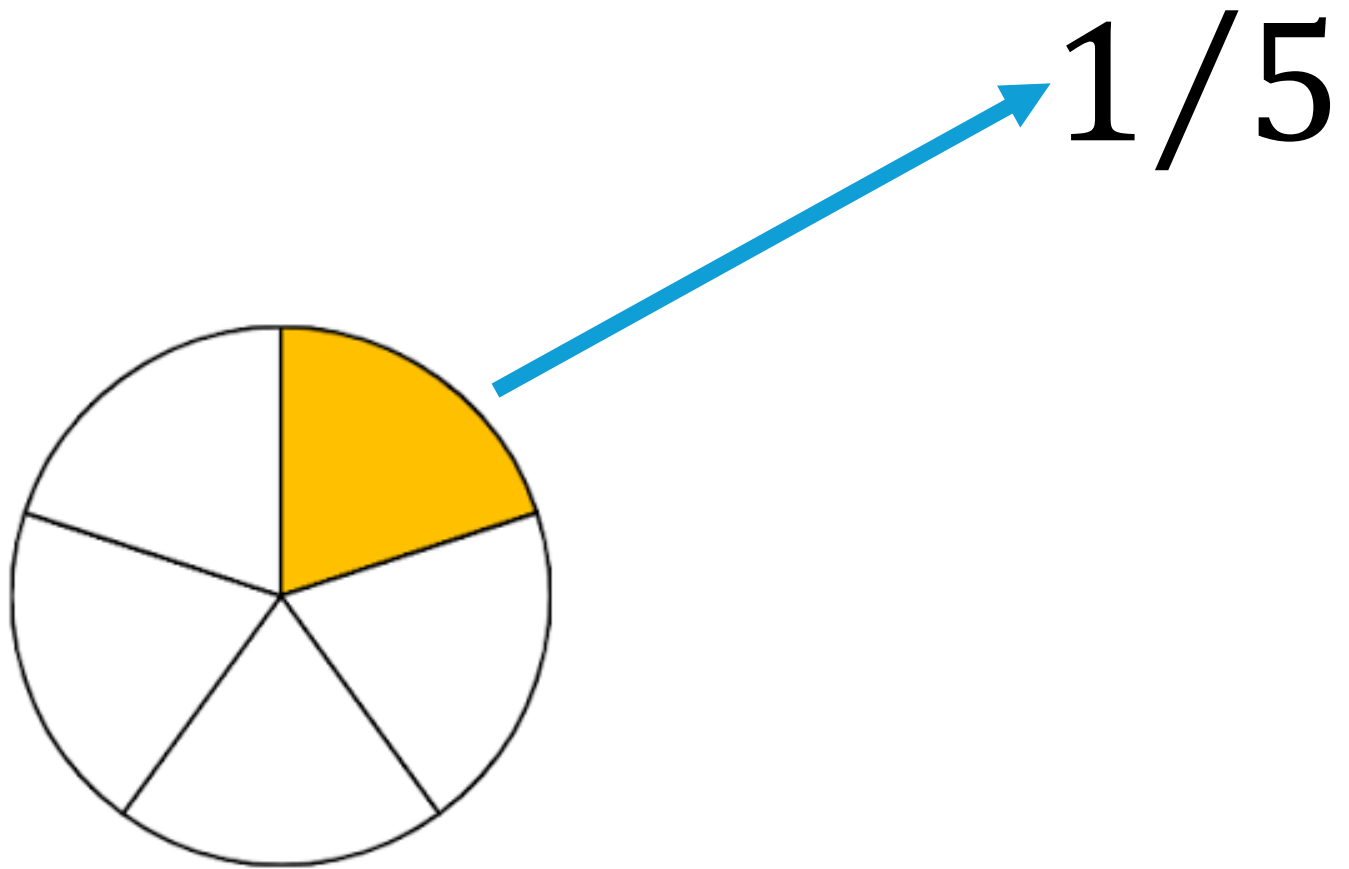


$\frac{1}{2}$

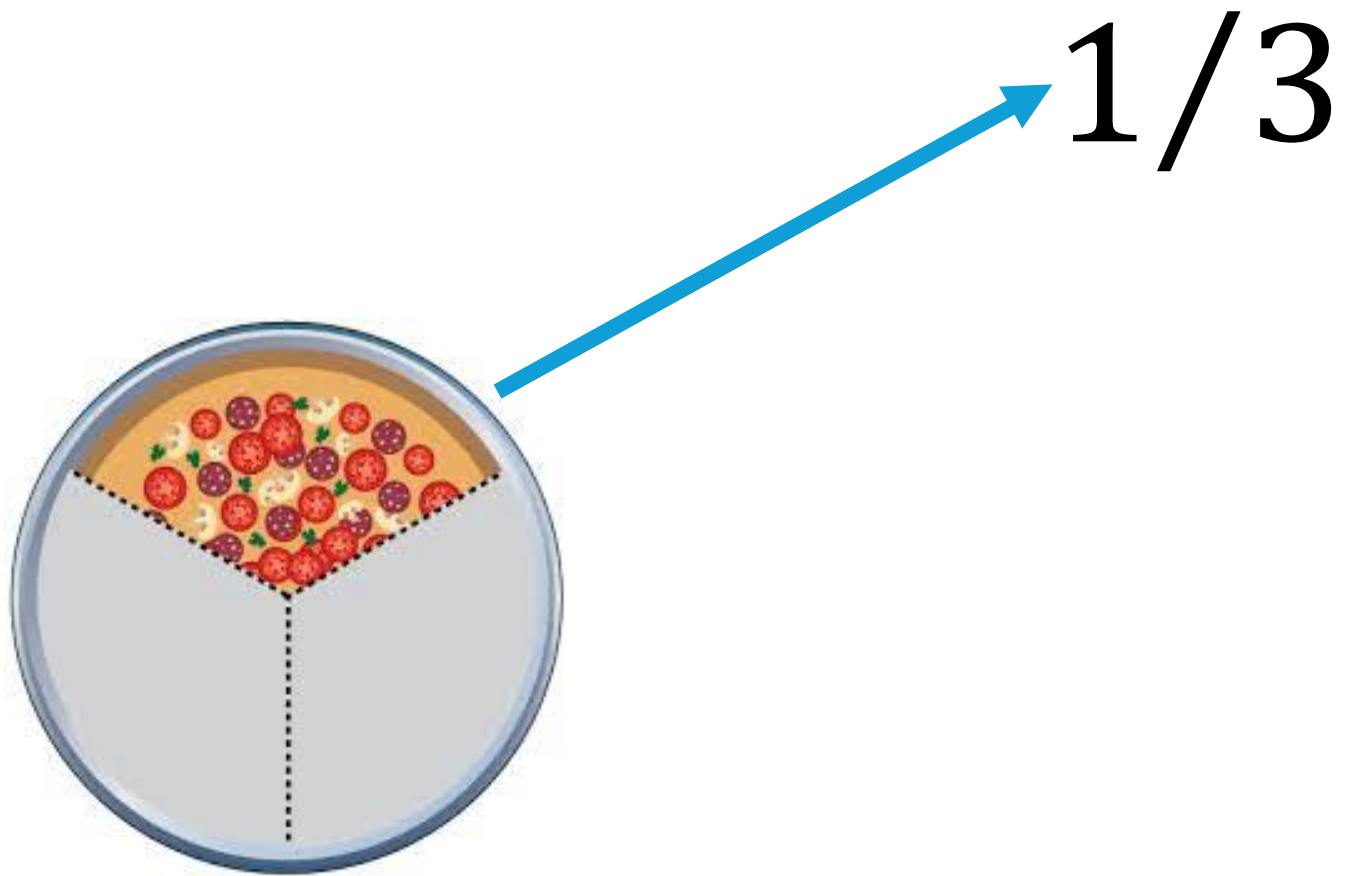


$\frac{1}{2}$

half / one half



one fifth



one third or a third



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$$\frac{2}{3}$$

$\frac{2}{3}$

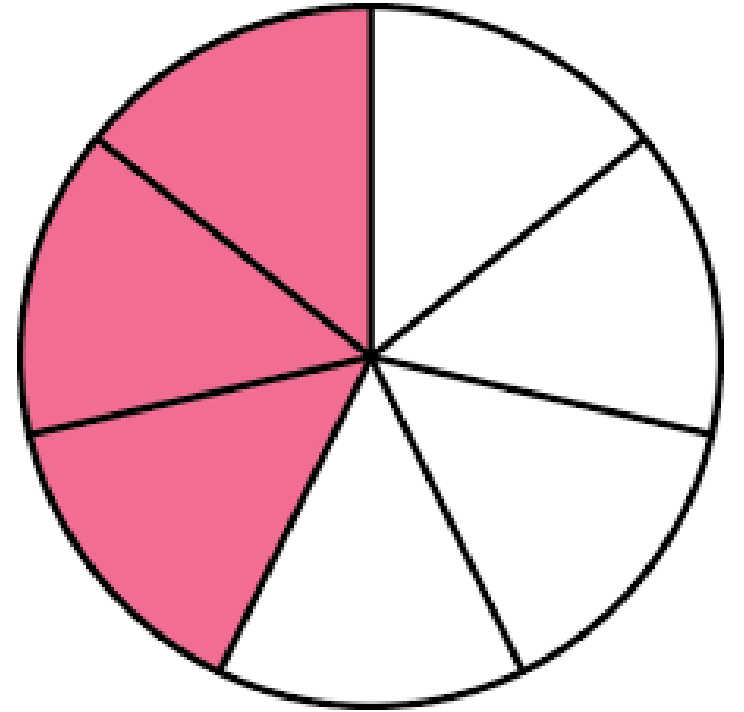
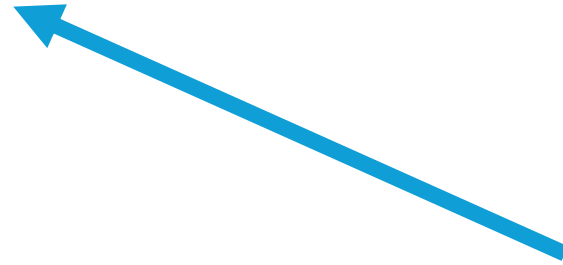
two thirds

$1/4$



a quarter or one quarter

$3/7$



three sevenths



Fractions

This is how we read fractions



$\frac{1}{2}$: half / one half



$\frac{1}{5}$: one fifth



$\frac{1}{3}$: a third / one third



$\frac{2}{3}$: two thirds



$\frac{1}{4}$: a quarter / one quarter



$\frac{3}{7}$: three sevenths



Thank You

