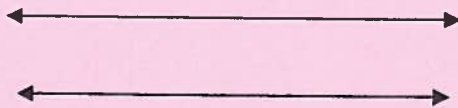
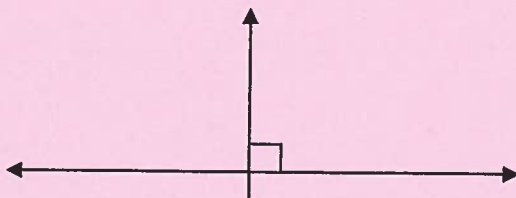


Some Terms You Should Know

parallel: lines that travel in the same direction and never intersect



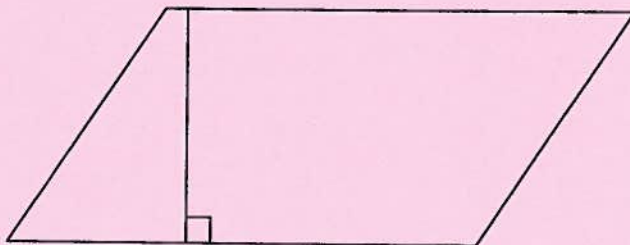
perpendicular: meeting at a 90° angle



parallelogram: a four sided polygon with opposite sides parallel and equal in length.

base: the bottom edge of a polygon

height: the length of the line **perpendicular** to the base that meets the opposite line of the polygon



Formula Sheet

Area of a rectangle:

Area = length x width

$$A = L \times w$$

Area of a parallelogram:

Area = base x height

$$A = b \times h$$

Area of a triangle:

$A = (\text{base} \times \text{height}) \div 2$

$$A = \frac{(b \times h)}{2}$$

Area of a circle:

$A = \pi \times \text{radius} \times \text{radius}$

$$A = \pi \times r^2$$

Circumference:

$$C = \pi \times d$$

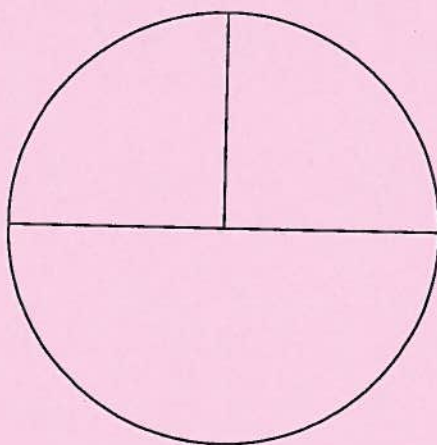
Circle Geometry

Parts of a Circle

circumference: the distance around the outside of a circle. It is similar to perimeter in rectangles, triangles and parallelograms.

diameter: a line segment that joins two points along the circumference of a circle, and passes through the center. You could also call it the line that cuts a circle exactly in half.

radius: half of the diameter. It is a line drawn from the center of a circle to any point around its circumference.



pi (π): the ratio of the circumference of a circle to its diameter.

- If you were to take a string and make it the exact length of a circle's diameter, how many lengths would it take to go around the outside (circumference) of that circle?
- In every case, the answer is 3.14 times. This means that the circumference of a circle is equal to 3.14 times the diameter of the same circle.

- The number 3.14 is a constant which is true for all circles and is given the name pi and the symbol π .

$$\pi = 3.14$$

- To find the circumference of any circle if you know the diameter, you may use the formula circumference is equal to π times the diameter, or

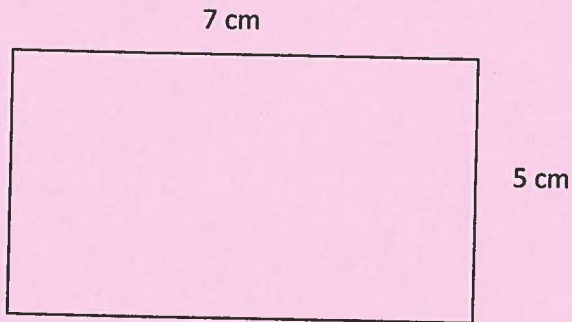
$$C = \pi \times d$$

- This formula may be rearranged to find the diameter if you already know the circumference

$$d = C \div \pi$$

Measurement

Area of a Rectangle



The area of any rectangular shape can be calculated by multiplying the length by the width.

$$A = l \times w$$

Or Area = length x width

For the above shape: $A = l \times w$

Always show the formula

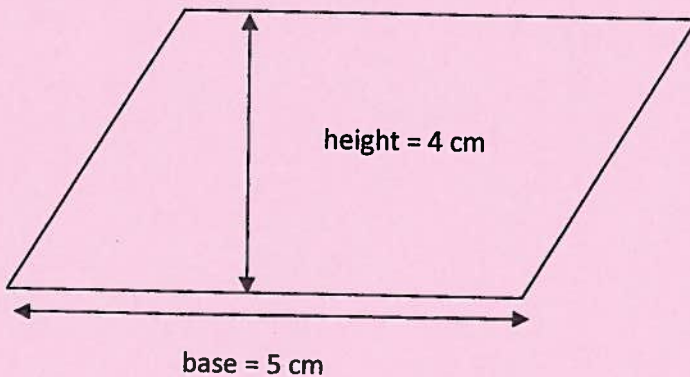
$$A = 7\text{cm} \times 5\text{ cm}$$

Always show the units...

$$A = 35\text{ cm}^2$$

The answer is always in square units

Area of a Parallelogram



The area of a parallelogram is calculated by multiplying its base by its height.

$$\text{Area} = \text{base} \times \text{height}$$

$$A = b \times h$$

For the above shape: $A = b \times h$

Always show the formula

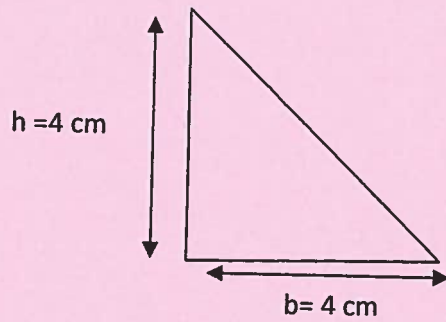
$$A = 5\text{cm} \times 4\text{ cm}$$

Always show the units...

$$A = 20\text{ cm}^2$$

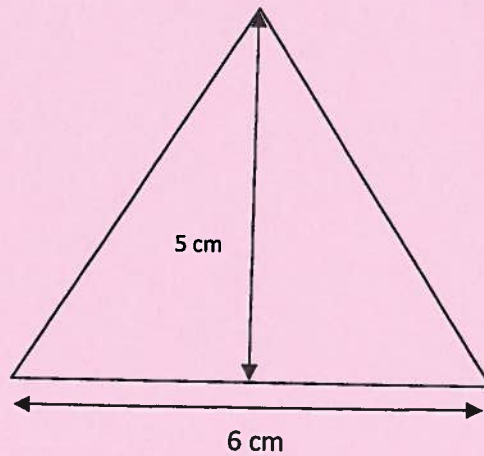
The answer is always in square units

Area of a Triangle



The area of a triangle is calculated by multiplying its base by its height, and then dividing by 2.

$$A = \frac{b \times h}{2}$$



For the above shape:

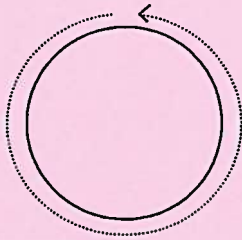
$$A = \frac{b \times h}{2}$$

$$A = \frac{6 \text{ cm} \times 5 \text{ cm}}{2}$$

$$A = \frac{30 \text{ cm}^2}{2}$$

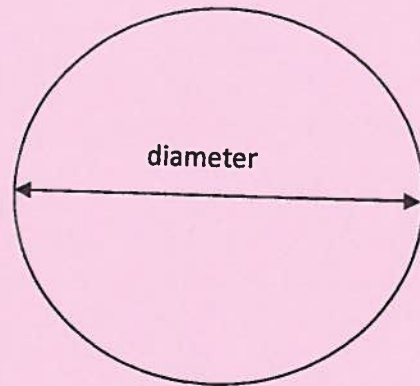
$$A = 15 \text{ cm}^2$$

Measurement - Circles

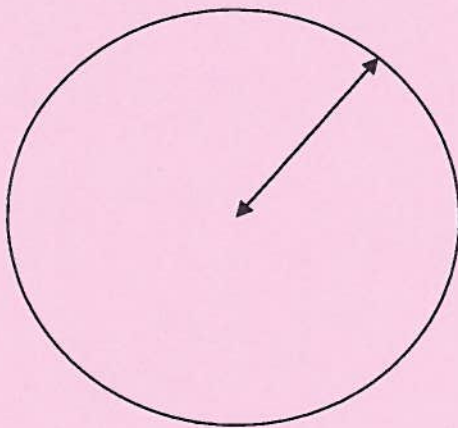


The distance all the way around the edge of a circle is the *circumference*.

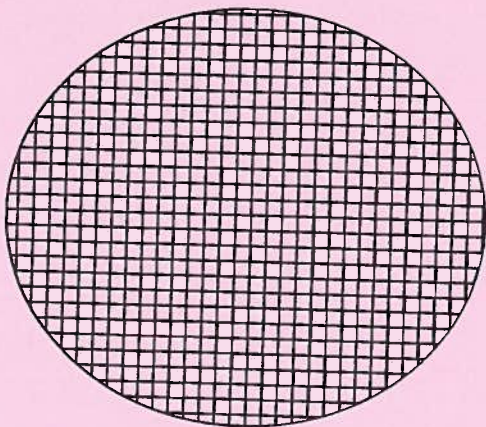
C = circumference



The distance across the circle, through the center, is called the *diameter*. d = diameter



The distance from the center of the circle to the edge is the *radius*. r = radius

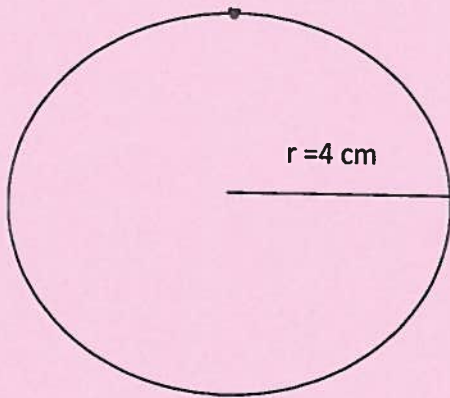


The amount of space inside a shape is called the Area.

It is measured in square units (cm^2 , m^2)

A = area

Circumference of a Circle



The circumference of a circle is measured by multiplying the diameter of the circle by "pie".

$$C = \pi \times d$$

Because the diameter of a circle is twice as long as the radius ($d = 2r$), we can also write this formula as:

$$C = \pi \times 2 \times r$$

For the above shape: $C = \pi \times d$

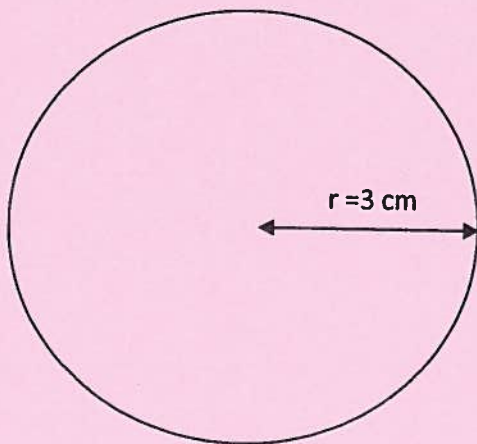
Always show the formula

$$C = \pi \times 2 \times r$$

$$C = 3.14 \times 2 \times 4 \text{ cm}$$
 Always show the units...

$$C = 25.12 \text{ cm}$$

AREA of a Circle



Area of a circle is calculated by:

$$A = \pi r^2$$

Which is the same as:

$$A = \pi \times r \times r$$

$$A = 3.14 \times 3 \text{ cm} \times 3 \text{ cm}$$

$$A = 28.26 \text{ cm}^2$$