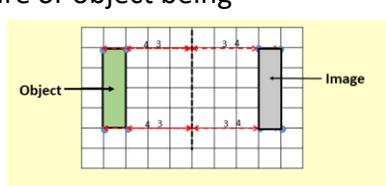


Maths Knowledge Organiser

YEAR 8– PART 5

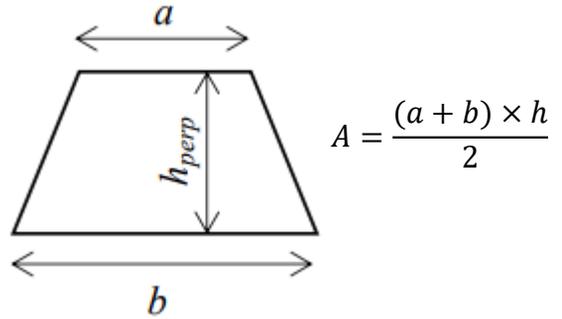
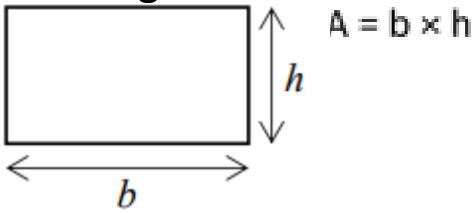
Key Language

| | | |
|----|--|--|
| 1 | Parallel | Straight lines that never meet |
| 2 | Angle | The figure formed by two straight lines meeting (measured in degrees) |
| 3 | Transversal | A line that cuts across two or more other (normally parallel) lines. |
| 4 | Isosceles | Two equal size lines and equal size angles (in a triangle or trapezium) |
| 5 | Polygon | A 2D shape made with straight lines |
| 6 | Sum | Addition (total of all the interior angles added together) |
| 7 | Regular polygon | All the sides have equal length; all the interior angles have equal size. |
| 8 | Congruent | The same |
| 9 | Area | Space inside a 2D object |
| 10 | Perimeter | Length around the outside of a 2D object |
| 11 | Pi (π) | The ratio of a circle's circumference to its diameter. |
| 12 | Perpendicular | At an angle of 90° to a given surface. |
| 13 | Formula | A mathematical relationship/ rule given in symbols. E.g. $b \times h = \text{area of rectangle/ square}$ |
| 14 | Infinity: (∞) | A number without a given ending (too great to count to the end of the number) |
| 15 | Sector | A part of the circle enclosed by two radii and an arc. |
| 16 | Compound shape | a shape made up of others joined together. It can be a shaded area where a shape has been 'cut out'. |
| 17 | Reflection | A transformation in which an object is reflected across a line, creating a mirror image. |
| 18 | Reflection symmetry | A type of symmetry where one half of an image is the reflection of the other half. |
| 19 | Mirror line | A line of reflection. |
| 20 | Horizontal | Parallel to the horizon. The x -axis is a horizontal line.  |
| 21 | Vertical | At a right angle to the horizon. The y -axis is a vertical line  |
| 22 | Image | The result of a shape, picture or object being reflected.  |

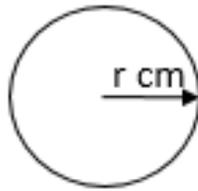
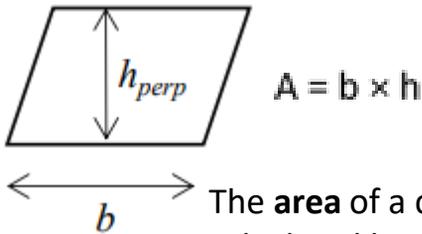




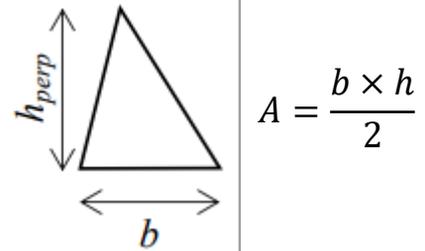
Rectangle



Parallelogram



The **area** of a circle is calculated by πr^2



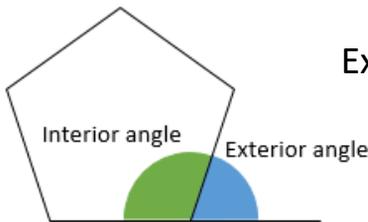
For parallelograms, triangles and trapeziums you have to use the perpendicular height.



Angles

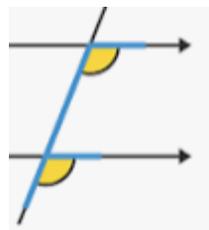
Angles in polygons

Sum of interior angles = $(\text{number of sides} - 2) \times 180$

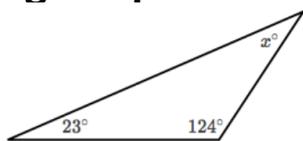


Exterior angles of **regular** polygons = $\frac{360}{\text{number of sides}}$

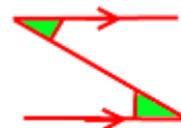
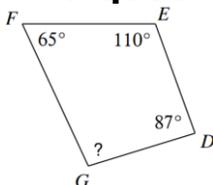
Corresponding angles are equal in size.



Angles in a **triangle equal 180°.**

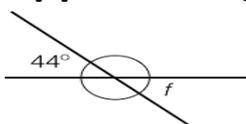


Angles in a **quadrilateral equal 360°.** **Alternate angles** are equal in size.



Vertically opposite angles are equal

in size

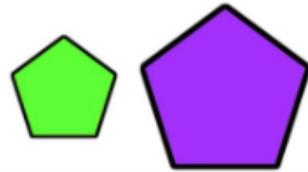


Allied/co-interior angles add to 180°.



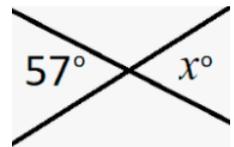


1. What is the formula for area of a rectangle?
2. Describe an isosceles triangle.
3. What do the angles in a triangle add to?
4. What do co-interior angles add to?
5. Describe parallel lines
6. What do we call a 2d shape made up of straight lines?

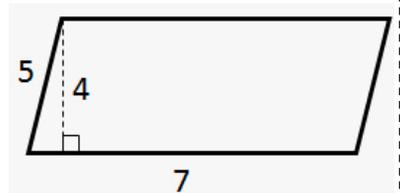


7. What does congruent mean.
8. Are these shapes congruent?
9. What is the symbol for infinity?
10. What ratio does π (pi) represent?
11. Draw a horizontal line.
12. Which axis is the vertical axis?
13. Describe a regular polygon.
14. What do we call a shape made up of others joined together?
15. What is the formula for area of a circle?
16. What do the angles add to in a quadrilateral?
17. What is the formula for the sum of interior angles in a polygon?

18. How do you find the exterior angle of a regular polygon?
19. What is meant by image?
20. How is area different to perimeter?
21. What does perpendicular mean.
22. What is the size of angle x?



23. Which of the numbers do you multiply together to find the area of this parallelogram?
24. What is a transversal?
25. Which of these sets of angles are always equal?



Corresponding Co Interior Alternate

ANSWERS

1. Area = base x height
2. Two equal sides and two equal angles.
3. 180°
4. 180°
5. Straight lines that never meet.
6. Polygon
7. Exactly the same
8. No
9. ∞
10. The ratio between the circumference and the diameter.
11. Horizontal line
12. Y axis
13. Equal sides and equal angles.
14. Compound shape.

15. Area = πr^2
16. 360°
17. Sum of interior angles = $(\text{number of sides} - 2) \times 180$
18. $\frac{360}{\text{number of sides}}$



19. The result of a shape, picture or object being reflected.
20. Area is the space inside, perimeter is the distance around the outside.
21. At an angle of 90° to a given surface
22. 57°
23. 4 and 7.
24. A line that cuts across two or more other (normally parallel) lines.
25. Corresponding and Alternate