

Maths Revision Worksheet: Paper II Geometry

1. I know that that a **right angle is 90°** , a **straight line angle is 180°** , an **acute angle is between 0° and 90°** , an **obtuse angle between 90° and 180°** and a **reflex angle is between 180° and 360°** .
2. I know that the **sum of angles on a straight line add to 180°** , the **sum of angle meeting at a point add to 360°** and that **vertically opposite angles formed when 2 straight lines cross at a point are equal**.
3. I know that angles formed when a **straight line crosses a pair of parallel lines** have the following properties: **corresponding angles are equal**, **alternate angles are equal** and that the **sum of interior angles adds up to 180°** .
4. I know that an **equilateral triangle has 3 equal sides and 3 equal angles (60°)**
5. I know that an **isosceles triangle has 2 sides equal in length and that the angles opposite the equal sides are equal** (very important rule).
6. A **right angled triangle has 1 angle of 90°** and that **Pythagoras** rule can be used in these triangles to find the length of any 3rd side if I know the length of the other 2. **$a^2 = b^2 + c^2$**
7. I know that **triangles without any of the above properties are known as scalene triangles**.
8. I know that the **sum of angles in a triangle is 180°** .
9. I know that the **exterior angle in a triangle is equal to the sum of the interior opposite angles**.
10. I know **congruent triangles are the same size and shape** (they are the same). Triangles can be shown to be congruent if they have 3 pairs of sides the same length '**SSS**', 2 pairs of side lengths are the same length and the angle between the 2 sides is the same '**SAS**', two pairs of angles are equal and the sides between the 2 equal angles are equal in length '**ASA**' or both triangles have a right angle, the hypotenuses are equal and one pair of corresponding sides are equal in length '**RHS**'.
11. I can use the above information to solve problems in Ex 11.1 Page 305.
12. I know that the **area of a triangle** can be found by multiplying $\frac{1}{2}$ the chosen base side by the perpendicular height to that base side. **$A = \frac{1}{2} \times \text{base} \times \text{Perp Height}$** .

THEOREM 1 For any triangle, base height does not depend on the choice of base (but make sure you use the height that is perpendicular to that chosen base)

Ex 1 Page 309

13. I can find the area of a **parallelogram** using
Area = Base X Perpendicular Height

- **Opposite sides in a parallelogram are congruent**
- **Opposite angles in a parallelogram are congruent**
- **I know that consecutive angles add to 180°**
- **If one angle in a parallelogram is a right angle..all angles are right angles**
- **Diagonals in a parallelogram bisect each other**
- **Diagonals in a parallelogram bisect the parallelogram into 2 congruent triangles of equal area.**

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Theorem 2 The area of a parallelogram is the base multiplied by the perpendicular height.

Ex 2 Page 310

14. I know that

Theorem 3 A diagonal of a parallelogram bisects the area.

15. I know that for a triangle...

16.

Theorem 4 The angle opposite the greater of 2 sides is greater than the angle opposite the lesser side.

And that

Converse of theorem states that the side opposite the greater of the two angles is longer than the side opposite the lesser side.

17. I know that for a triangle...triangle inequality...

Theorem 5 Two sides of a triangle are together greater than the third side

18. I know that for transversals....

Theorem 6 If three parallel lines cut off 2 equal segments on some transversal line, they will cut off 2 equal segments on any other transversal.

Note: that the RATIO of the 2 segments cut on the first transversal will be the same as the RATIO of the 2 segments cut off on the second transversal

Example 1 Pg 314

19. I know that

Theorem 7 A line drawn parallel to one side of a triangle divides the other two sides in the same ratio.

Example 2 Pg 315

20. I know that similar triangles are 'equiangular' in that have 2 angles in one triangle are equal to 2 angles the other.

21. I know that in similar triangles...the corresponding sides are those sides opposite the same angles.

And that..

Theorem 8 If two triangles are similar then their corresponding sides are proportional.

SEE Formula Page 316 and Example 3 Page 316

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22. I know that similar triangles are not necessarily the SAME size.

23. I know that it is important to look out for isosceles triangle made up of radii in circle geometry problems.

Circles

24. I know for Circles that the angle in a semicircle is a right angle...

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25. I know that a tangent to a circle is a straight line which meets the circle at one point only.

26. I know that the chord of a circle is a line inside the circle which cuts the circle at 2 points and that

Circle Theorem 1 The perpendicular drawn from the centre of a circle to a chord bisects that chord.

Ex 1 Pg 321

27. I know that

Circle Theorem 2 A tangent is perpendicular to the radius that goes (from the centre) to the (tangent) point of contact.

28. I know that

Circle Theorem 3 If a point P lies on a circle k, and a line l is perpendicular to the radius to P, then l is a tangent to k.

Ex 2 Pg 321

29. I know that

If two circles intersect at one point only, then the two centres and the point of contact are collinear.