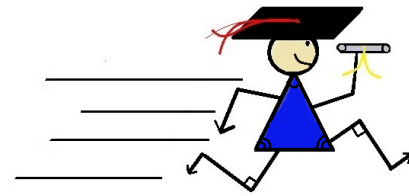# TRIANGLES SMART CARD

Volume 7, Chapter 2

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1. **Side-Side-Side (SSS) Postulate:** If three sides of one triangle are congruent to the corresponding three sides of another triangle, then the two triangles are congruent.

2. **Side-Angle-Side (SAS) Postulate:** If the vertices of two triangles can be paired so that two sides and the included angle of one triangle are congruent to the corresponding parts of the second triangle, then the two triangles are congruent.

3. **Angle-Side-Angle (ASA) Postulate:** If the vertices of two triangles can be paired so that two angles and the included side of one triangle are congruent to the corresponding parts of the second triangle, then the two triangles are congruent.

4. **Hypotenuse-Leg (Hy-Leg) Postulate:** If the vertices of two right triangles can be paired so that the hypotenuse and leg of one triangle are congruent to the corresponding parts of the second right triangle, then the two right triangles are congruent.

5. **Triangle Inequality Postulate:** The length of each side of a triangle must be less than the sum of the lengths of the other two sides.

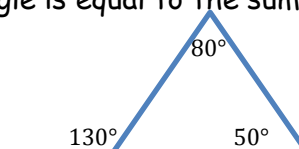6. The sum of the measures of the angles of a triangle is 180.

7. The measure of each angle of an equiangular triangle is 60.
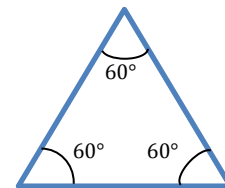
8. The acute angles of a right triangle are complementary.

9. If two angles of a triangle are congruent to two angles of another triangle, then the remaining pair of angles are also congruent.

10. The measure of an exterior angle of a triangle is equal to the sum of the measures of the two nonadjacent interior angles.

11. The measure of an exterior angle of a triangle is greater than the measure of either nonadjacent interior angle.

TRIANGLES SMART CARD

12. Angle-Angle-Side (AAS) Theorem: If the vertices of two triangles can be paired so that two angles and the side opposite one of them in one triangle are congruent to the corresponding parts of the second triangle, then the two triangles are congruent.
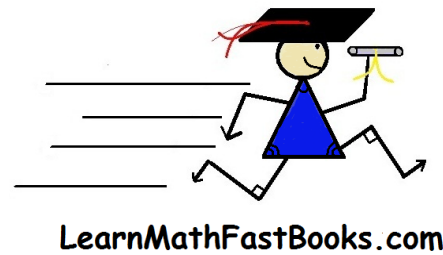
13. If two sides of a triangle are congruent, then the angles opposite those sides are congruent.

14. If two angles of a triangle are congruent, then the sides opposite are congruent.
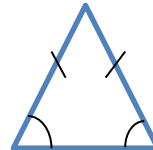
15. If two sides of a triangle are not congruent, then the angles opposite these sides are not congruent, and the greater angle is opposite the longer side.

Longest Side

16. If two angles of a triangle are not congruent, then the sides opposite these angles are not congruent, and the longer side is opposite the greater angle.

Biggest Angle
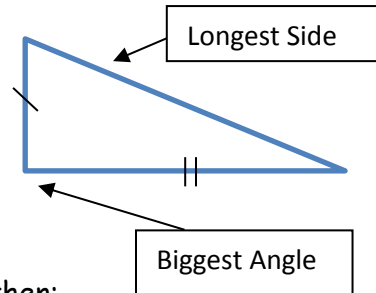
17. If in a right triangle the altitude to the hypotenuse is drawn then:

- The altitude separates the original triangle into two new triangles that are similar to the original triangle and to each other.
- The length of each leg is the mean proportional between the length of the hypotenuse segment adjacent to the leg and the length of the entire hypotenuse. $\frac{d}{c} = \frac{c}{d+e}$
- The length of the altitude is the mean proportional between the lengths of the segments it forms on the hypotenuse. $\frac{d}{a} = \frac{a}{e}$
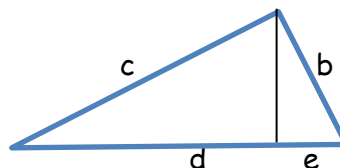
18. The area of a triangle is equal to one half the product of the lengths of the base and the altitude drawn to that base. $Area\ of\ a\ Triangle = \frac{1}{2}(bh)$