# NOTES 5.1 – CLASSIFYING TRIANGLES

Objective:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| TERM | **DESCRIPTION** | **SKETCH** |
| **Triangle** |  |  |

A triangle is made up of three components:

P

Q

R

***Vertices***:

***Sides***:

***Angles***:

|  |  |  |  |
| --- | --- | --- | --- |
| **EXAMPLE 1: Classify each of the triangles by SIDES.**   |  |  |  | | --- | --- | --- | | **a)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **b)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **c)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
| **EXAMPLE 2: Classify each of the triangles by ANGLES.**   |  |  |  |  | | --- | --- | --- | --- | | **a)\_\_\_\_\_\_\_\_\_\_\_** | **b)\_\_\_\_\_\_\_\_\_\_\_** | **c)\_\_\_\_\_\_\_\_\_\_\_** | **d)\_\_\_\_\_\_\_\_\_\_** | |

**Triangles can be classified by either angles or sides.**

|  |  |
| --- | --- |
|  | **Acute** |
|  | **Obtuse** |
|  | **Right** |
|  | **Equiangular** |

|  |  |
| --- | --- |
| **Triangle Sum Theorem** |  |
| **Isosceles** |  |
| **Scalene** |  |
| **Equilateral** |  |

**Notes 5.1 (Continued)**

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| **EXAMPLE 3: Find the measure of the third angle of a triangle, if**  **the first angle has a measure of and the second**  **angle measures.** |
| **EXAMPLE 4: Find the measure of each angle of .**  **R**  **S**  **T**  **\_\_\_\_\_\_\_\_\_\_**  **\_\_\_\_\_\_\_\_\_\_**  **\_\_\_\_\_\_\_\_\_\_** |
| **EXAMPLE 5: Find the value of ‘’.**  **R**  **S**  **T**  **\_\_\_\_\_\_\_\_\_\_**  Based on this example, we can say that each angle of an equiangular triangle is . |
| **EXAMPLE 6: Find the value of ‘’.**  **J**  **K**  **L**  **\_\_\_\_\_\_\_\_\_\_**  and ∠ are classified as ***acute angles.*** Since their sum is ***,*** we  can say that the acute angles of a right triangle are ***complementary.*** |

An exterior angle of a triangle is formed by one side of the triangle and the extension of an adjacent side.

To find the measure of an exterior angle of a triangle, add the two remote interior angles.

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| **EXAMPLE 7: Find the measure of .**  **\_\_\_\_\_\_\_\_\_\_\_\_** |
| **EXAMPLE 8: In , and , find .**  **\_\_\_\_\_\_\_\_\_\_\_\_** |
| **EXAMPLE 9: In , and . Find**  **.**  **\_\_\_\_\_\_\_\_\_\_\_\_** |