Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Triangles – Inequalities**

**Triangle Proofs!!!**

|  |  |
| --- | --- |
| **Angle Sum Theorem**    **B**  **C**  **A** | **Exterior Angle Theorem**  **D**  **C**  **B**  **A** |

|  |  |  |
| --- | --- | --- |
| The sum of the lengths  of any two sides of a  triangle is greater than the length of the third side. |  |  |

Are these possible side lengths of a triangle?

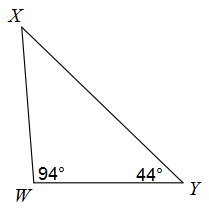
1. 10, 10, 6
2. 1, 7, 8
3. 6, 18, 9

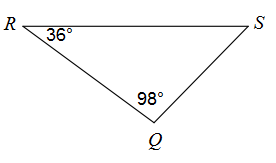
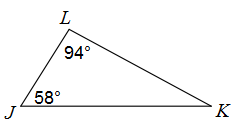
What is the range of possible side lengths for the third side?

1. 10, 11
2. 6, 8
3. 12, 7

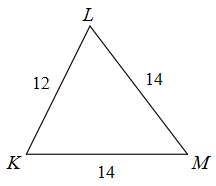
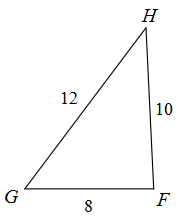
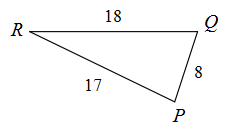
|  |  |  |
| --- | --- | --- |
| The shortest side of a triangle is opposite the smallest angle.  The longest side of a triangle  is opposite the largest angle. |  | List the sides from  shortest to longest! |

List the sides in order from least to greatest:



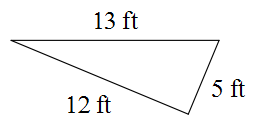
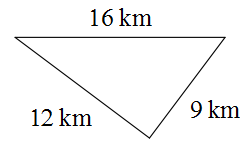
1. 
3. 

List the angles in order from least to greatest:

1. 
2. 
3. 

|  |  |  |
| --- | --- | --- |
| **Acute Triangles** | **Right Triangles** | **Obtuse Triangles** |
| b  a  c | c  a | c  a  b |
|  | b |  |

Classify each triangle as acute, right or obtuse.

1. 
2. 
3. 