

Name : _____

Score : _____ Date : _____

Triangle Inequality Theorem Worksheet

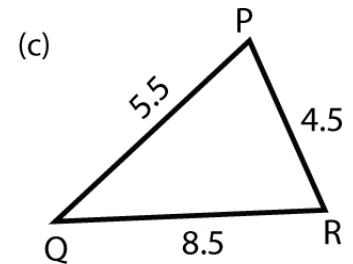
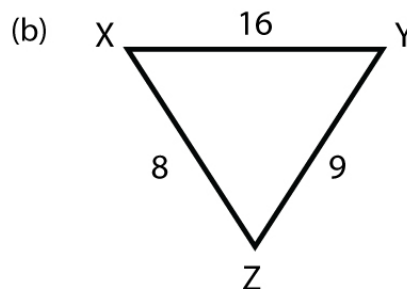
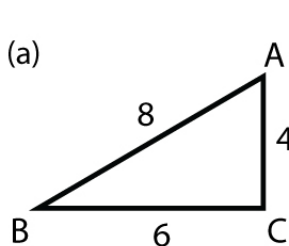
1 Decide whether each set of numbers can form a triangle

- (a) 5, 10, 15 (b) 6, 9, 16 (c) 9, 40, 41 (d) 7.5, 8.5, 14.5
 (e) 11, 12, 9 (f) 1, 16, 16 (g) 9, 5, 7 (h) 2, 15, 16

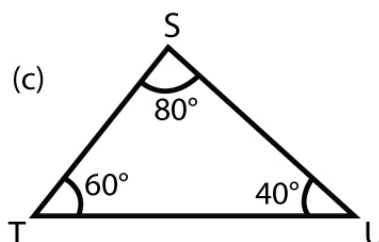
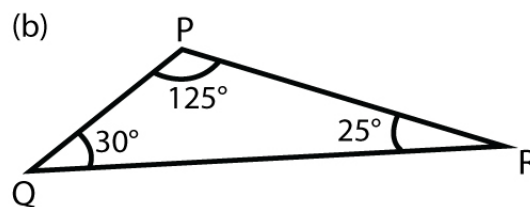
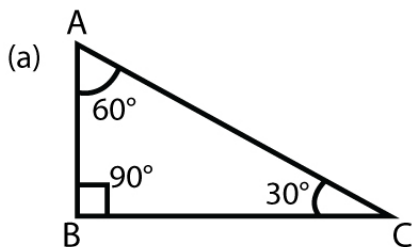
2 Two sides of a triangle have the following measures. Find the range of possible measures for the third side.

- (a) 14, 11 (b) 6, 10 (c) 15, 18 (d) 11, 20
 (e) 47, 21 (f) 5, 8 (g) 6, 9 (h) 17, 19

3 Name the largest and the smallest angle



4 List the sides in order, underline the side with the shortest length



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Answers

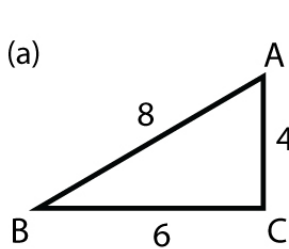
1 Decide whether each set of numbers can form a triangle

- (a) 5, 10, 15 **Yes** (b) 6, 9, 16 **No** (c) 9, 40, 41 **Yes** (d) 7.5, 8.5, 14.5 **Yes**
 (e) 11, 12, 9 **Yes** (f) 1, 16, 16 **Yes** (g) 9, 5, 7 **Yes** (h) 2, 15, 16 **Yes**

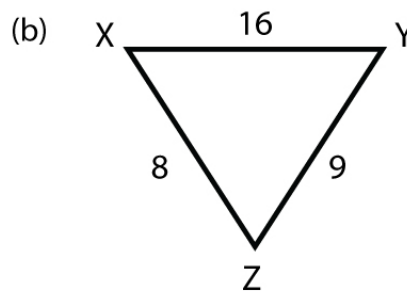
2 Two sides of a triangle have the following measures. Find the range of possible measures for the third side.

- | | | | |
|-----------------------------|---------------------------|----------------------------|----------------------------|
| (a) 14, 11
$3 < x < 25$ | (b) 6, 10
$4 < x < 16$ | (c) 15, 18
$3 < x < 33$ | (d) 11, 20
$9 < x < 31$ |
| (e) 47, 21
$26 < x < 68$ | (f) 5, 8
$3 < x < 13$ | (g) 6, 9
$3 < x < 15$ | (h) 17, 19
$8 < x < 26$ |

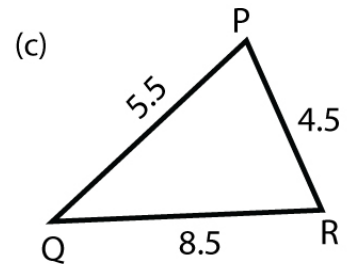
3 Name the largest and the smallest angle



Largest = $\angle ACB$, Smallest = $\angle ABC$

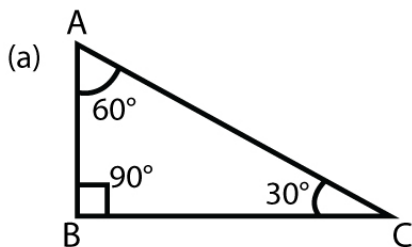


Largest = $\angle XZY$, Smallest = $\angle XYZ$

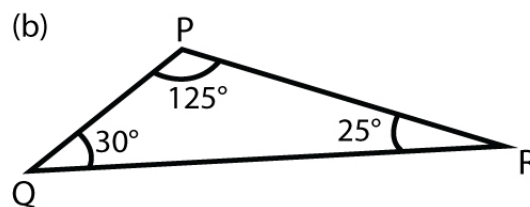


Largest = $\angle QPR$, Smallest = $\angle PQR$

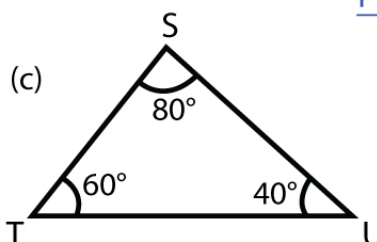
4 List the sides in order, underline the side with the shortest length



AB, BC, CA



PQ, QR, RP



ST, TU, US