Name _____ Date _____
Mr. Schlansky Geometry

Triangle Inequality Theorem

1. Which of the following cannot make up the three sides of a triangle?
1) {3,5,4} 3) {9,7,5}
2) {2,2,3} 4) {6,1,4}

2. Which of the following can make up the three sides of a triangle?
1) {2,4,2} 3) {8,1,6}
2) {1,7,4} 4) {5,5,7}

3. Which numbers could represent the lengths of the sides of a triangle?
1) 5,9,14
2) 7,7,15
3) 1,2,4
4) 3,6,8

4. Which of the following cannot make up the three sides of a triangle?
1) {5,1,6} 3) {3,5,6}
2) {9,14,8} 4) {7,10,4}

5. Which set of numbers represents the lengths of the sides of a triangle?
1) {5, 18, 13} 3) {16, 24, 7}
2) {6, 17, 22} 4) {26, 8, 15}

6. Which of the following cannot make up the three sides of a triangle?
1) {3,9,7} 3) {8,12,15}
2) {2,7,5} 4) {9,3,7}

7. In ΔBLA, $\overline{BL} = 12$ and $\overline{AL} = 8$. What is the range of possible values of $\overline{BA}$?

8. In ΔCAM, $\overline{CM} = 10$ and $\overline{CA} = 4$. What is the range of possible values of $\overline{MA}$?

9. In $\triangle ABC$, $AB = 5$ feet and $BC = 3$ feet. Which inequality represents all possible values for the length of $\overline{AC}$, in feet?

1) $2 \leq AC \leq 8$
2) $2 < AC < 8$
3) $3 \leq AC \leq 7$
4) $3 < AC < 7$

10. Two sides of a triangle are 7 and 11. The third side of the triangle can measure:

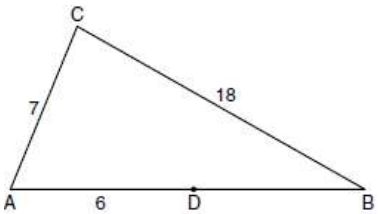
1) 4
2) 18
3) 8
4) 21

11. Jacquie is building a triangular fence for her tomato garden. She has an eight foot piece of fence and a four foot piece of fence. Which can be the length of the third piece of fence?

1) 2 feet
2) 5 feet
3) 4 feet
4) 12 feet

12. In the diagram below of $\triangle ABC$, D is a point on $\overline{AB}$, $AC = 7$, $AD = 6$, and $BC = 18$. The length of $\overline{DB}$ could be

1) 5
2) 12
3) 19
4) 25



(Not drawn to scale)