# 5-6 Standardized Test Prep

Inequalities in One Triangle

Multiple Choice

For Exercises 1–6, choose the correct letter.

1. Which of the following could be lengths of sides of a triangle?

   (A) 11, 15, 27   (B) 13, 14, 32   (C) 16, 19, 34   (D) 33, 22, 55

2. $\triangle ABC$ has the following angle measures: $m\angle A = 120$, $m\angle B = 40$, and $m\angle C = 20$. Which lists the sides in order from shortest to longest?

   (F) $\overline{CB}, \overline{BA}, \overline{AC}$ (H) $\overline{AC}, \overline{BA}, \overline{CB}$

   (G) $\overline{BA}, \overline{AC}, \overline{CB}$ (I) $\overline{CB}, \overline{AC}, \overline{BA}$

3. $\triangle RST$ has the following side lengths: $RS = 7$, $ST = 13$, and $RT = 19$. Which lists the angles in order from smallest to largest?

   (A) $\angle R, \angle S, \angle T$ (C) $\angle S, \angle T, \angle R$

   (B) $\angle T, \angle S, \angle R$ (D) $\angle T, \angle R, \angle S$

4. A triangle has side lengths 21 and 17. Which is a possible length for the third side?

   (F) 2   (G) 4   (H) 25   (I) 39

5. Look at $\triangle LMN$. Which lists the angles in order from the smallest to the largest?

   (A) $\angle L, \angle M, \angle N$ (C) $\angle N, \angle M, \angle L$

   (B) $\angle M, \angle N, \angle L$ (D) $\angle M, \angle L, \angle N$

6. **Algebra** What are the possible lengths for x, the third side of a triangle, if two sides are 13 and 7?

   (F) $6 < x < 20$ (G) $7 < x < 13$ (H) $6 \le x \le 20$ (I) $7 \le x \le 13$
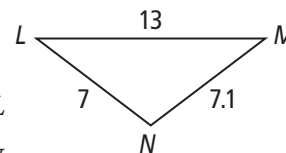
Short Response

7. What is the relationship between a and y? Explain.