

11.  $110^\circ$  (T7-6)

10.  $50^\circ$  (T6-1)

9.  $70^\circ$  (T6-1)

8.  $130^\circ$  (T7-6)

7.  $50^\circ$  (T7-1)

6. 
$$\begin{array}{l|l} 3x + 4x + 5x = 180^\circ & x = 15^\circ \\ 3x = 45^\circ & 12x = 180^\circ \\ 4x = 60^\circ & 5x = 75^\circ \\ 5x = 75^\circ & \end{array}$$

5. 
$$\begin{array}{l|l} x + 4x = 90^\circ & x = 18^\circ \\ 5x = 90^\circ & 18^\circ \text{ and } 72^\circ \\ 4x = 72^\circ & \end{array}$$

4. No, only some of them could also be equilateral.

3. C

2. D

1. A

# GEOMETRY

## The Complete Course

### Lesson Seven

## Triangles

KA8467

## Worksheet

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## I. VIDEOTAPE FOLLOW-UP QUESTIONS

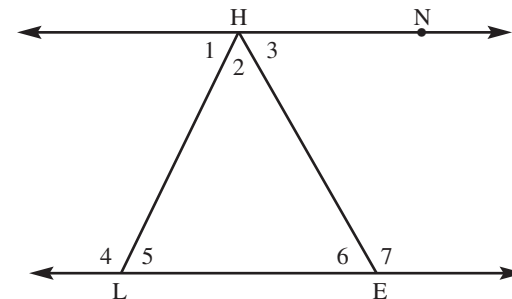
- I. Introduction.
- II. Definition.
- III. Parts of a triangle.
  - A. Three angles
  - B. Three sides
  - C. Three vertices
- IV. Classification of triangles.
  - A. Classification by their sides
    1. Scalene
    2. Isosceles
    3. Equilateral
  - B. Classification by their angles
    1. Acute
    2. Obtuse
    3. Right
    4. Equiangular
  - C. Combinations of classification
    1. Scalene-Acute
    2. Scalene-Obtuse
    3. Scalene-Right
    4. Isosceles-Acute
    5. Isosceles-Obtuse
    6. Isosceles-Right
    7. Equilateral-Equiangular (Acute)
- V. Theorems related to the measures of the angles of a triangle.
  - A. The sum of the measures of the angles of a triangle is 180. (T7-1)
  - B. If two angles of one triangle are congruent respectively to two angles of a second triangle, then the third angles are congruent. (T7-2)
  - C. The acute angles of a right triangle are complementary. (T7-3)
  - D. Each angle of an equiangular triangle measures 60. (T 7-4)
  - E. In a triangle, there can be at most one right angle, or at most one obtuse angle. (T7-5)
  - F. The measure of an exterior angle of a triangle is equal to the sum of the measures of the two remote interior angles. (T7-6)

## VI. Proof of a new theorem.

## II. SUPPLEMENTARY EXERCISES

1. If one angle of a triangle is a right angle or an obtuse angle, then the other two angles must be both
  - a) Acute
  - b) Obtuse
  - c) Right
  - d) Equal
2. If a right triangle contains an angle with a measure of  $45^\circ$ , then the triangle would be classified as
  - a) Scalene - Acute
  - b) Scalene - Right
  - c) Isosceles - Acute
  - d) Isosceles - Right
3. If a triangle is equilateral, then it is also always
  - a) Scalene
  - b) Obtuse
  - c) Equiangular
  - d) Right
4. Every equilateral triangle is also isosceles. Is every isosceles triangle also equilateral?
5.  $\triangle RST$  is a right triangle. The measure of one of its acute angles is four times the measure of the other acute angle. What are the measures of the two acute angles?
6. The measures of the interior angles of a triangle are in a ratio of 3:4:5. What are the measures of the three angles?

7-11 Given  $\triangle LEH$  with  $\overleftrightarrow{LE} \parallel \overleftrightarrow{HN}$ ,  $m\angle 2 = 60^\circ$ ,  $m\angle 5 = 70^\circ$ . Find the measure of the following angles:



7.  $m\angle 6 =$
8.  $m\angle 7 =$
9.  $m\angle 1 =$
10.  $m\angle 3 =$
11.  $m\angle 4 =$