

## EXTRA PRACTICE — Exercises

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### Unit IV – First Degree Relations with Three or More Placeholders Part C – Problem Solving Using Three or More Placeholders **Lesson 3 – “Geometric Figure” Problems**

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For each of the following story problems, answer the four analysis questions to find the system of equations needed to solve. Then solve and use common sense to check your answer.

1. The sum of the length, width, and height of a rectangular box is 16cm. The width is twice the height. Twice the length exceeds the sum of the width and height by 5. Find the length, width, and height of the box.
2. In triangle ABC, the measure of angle B is four times that of angle A. The measure of angle C is 30 degrees more than that of angle A. Find the measure of each angle.
3. The longest side of a triangle is, three times the length of the smallest side, and the perimeter is 83 inches. Twice the longest side exceeds the sum of the other two sides by 34 inches. Find the lengths of the three sides.
4. The largest angle in a triangle is, five degrees less than twice the smallest angle. The other angle is, ten degrees less than the largest. Find the measures of the angles.
5. One angle of a triangle is twice another. The third angle exceeds four times the smaller by 12 degrees. Find the measure of each angle.
6. The perimeter of a triangle is 45 cm. The two shorter sides differ by 2 cm. The longest is, 7 cm. less than the sum of the other two. Find the length of each side.
7. The largest angle of a triangle is, 15 degrees greater than the smallest. The sum of the two larger angles exceeds twice the smaller by 24 degrees. Find the measure of each angle.

# EXTRA PRACTICE — Answer Key

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For each of the following story problems, answer the four analysis questions to find the system of equations needed to solve. Then solve and use common sense to check your answer.

1. The height is 3, the width is 6.
2.  $A = 25$ ,  $B = 100$ ,  $C = 55$
3.  $L = 39$ ,  $13 = S$ ,  $M = 31$
4. The largest angle measures 75 degrees; the smallest angle measures 40 degrees; the other angle measures 65 degrees.
5. The measure of angle A is 48 degrees. The measure of angle B is 24 degrees. The measure of angle C is 108 degrees
6. The sides measure 12, 14, and 19
7. The angles measure 67, 61 and 52 degrees