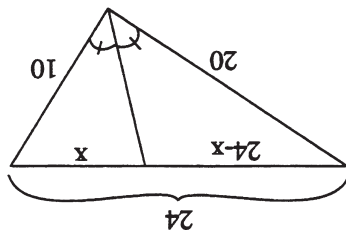
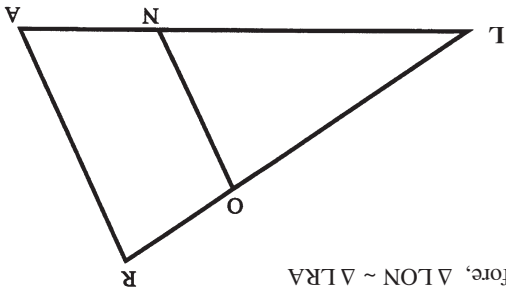


1.  $\angle A = \angle X$ ,  $\angle B = \angle Y$ ,  $\angle C = \angle Z$
2.  $\angle LON \cong \angle LRA$  (P6-1)  
 $\angle LNO \cong \angle LAR$  (P6-1)  
 $\angle L \cong \angle L$  Reflexive  
 (Also, P18-1)  
 Therefore,  $\triangle LON \sim \triangle LRA$
3.  $\frac{\angle A + \angle B + \angle C}{42^\circ + \angle B + 65^\circ} = \frac{180^\circ}{180^\circ}$   
 $\angle B = 73^\circ$
4.  $\frac{12}{15} NA = 10$
5.  $\frac{8}{20} NA = 7 \frac{1}{5}$
6. 16 (T18-3)
7.  $10 \frac{3}{2}$  (T18-3)
8. 32 (T18-3)
9.  $\frac{9}{12} X = \frac{20}{18}$   
 $12X = 180$   
 $X = 15$



$$\frac{x}{24-x} = \frac{10}{20}$$

$$20x = 10(24-x)$$

$$20x = 240 - 10x$$

$$30x = 240$$

$$x = 8$$

# GEOMETRY

## The Complete Course

### Lesson Eighteen

## Similar Triangles

KA8478

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## I. VIDEOTAPE FOLLOW-UP QUESTIONS

Similar triangles

I. Introduction.

II. **AA Similarity Postulate.**

- If two angles of a triangle are congruent to two angles of another triangle, then the two triangles are similar. (P18-1)
- Example
- Applications

III. **SAS Similarity Theorem.**

- If an angle of one triangle is congruent to an angle of another triangle and the corresponding sides that include these angles are proportional, then the triangles are similar. (T18-1)
- Example
- Applications

IV. **SSS Similarity Theorem.**

- If all three pairs of corresponding sides of two triangles are proportional, then the two triangles are similar. (T18-2)
- Example
- Applications

V. **Triangle Proportionality Theorem.**

- If a line is parallel to one side of a triangle and intersects the other two sides, then it divides the two sides proportionally. (T18-3)
  - If a line divides two sides of a triangle proportionally, then it is parallel to the third side of the triangle. (T18-4)
  - If three or more parallel lines have two transversals, then they divide the transversals proportionally. (T18-5)
- Example
- Applications

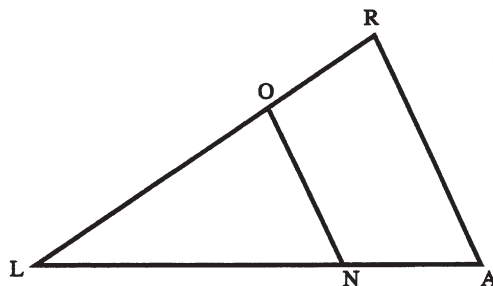
VI. **Triangle Angle-Bisector Theorem.**

- If a ray bisects an angle of a triangle, then it divides the opposite side into segments proportional to the other two sides of the triangle. (T18-6)
- Example
- Applications

## II. SUPPLEMENTARY EXERCISES

1.  $\triangle ABC \sim \triangle XYZ$ . If  $\angle A = 42^\circ$  and  $\angle Z = 65^\circ$ , what is the measure of  $\angle B$ ?

2-5 Given  $\triangle LRA$  with  $\overline{ON} \parallel \overline{RA}$ ,  $LO = 12$ ,  $OR = 8$ .



2.  $\triangle LON \sim$  \_\_\_\_\_

3. What is the scale factor of the smaller triangle to the larger triangle?

4. If  $LN = 15$ , then  $NA =$  \_\_\_\_\_

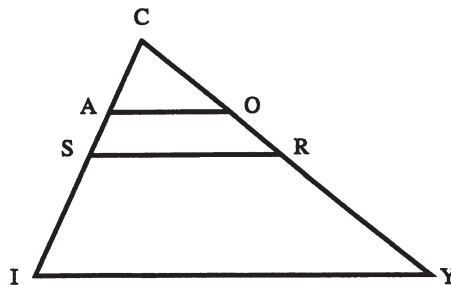
5. If  $LA = 18$ , then  $NA =$  \_\_\_\_\_

Given  $\triangle CIY$  with  $\overline{AO} \parallel \overline{SR} \parallel \overline{TY}$ ,  $CA = 12$ ,  $AS = 8$ ,  $SI = 16$ ,  $CY = 48$ .

6.  $CO =$  \_\_\_\_\_

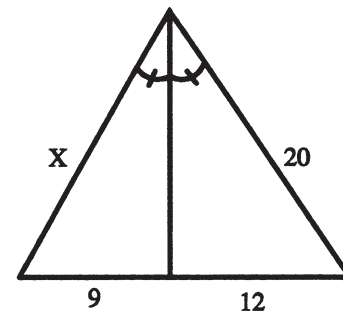
7.  $OR =$  \_\_\_\_\_

8.  $OY =$  \_\_\_\_\_



9-10 Solve for  $x$  in the following problems:

9.  $x =$  \_\_\_\_\_



10.  $x =$  \_\_\_\_\_

