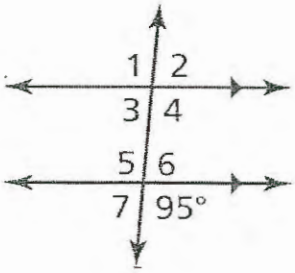
Name: Answers Period: _____

Chapter 3 Review - 3.1 + 3.2

Part I: Parallel Lines and Transversals.

Use the figure to find the measure of the angle. Explain your reasoning.

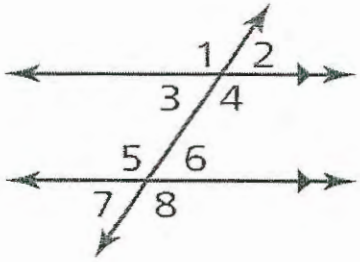


1. ∠5 = 95°, because vertical angles are congruent.

2. ∠1 = 95°, because alternate exterior angles are congruent.

3. ∠4 = 95°, because corresponding angles are congruent.

Find the missing angle measure.



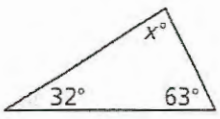
4. If the measure of ∠4 = 98° then the measure of ∠7 = 82°.

5. If the measure of ∠3 = 59° then the measure of ∠5 = 121°.

Part II: Angles of Triangles.

Find the measure(s) of the interior angles. Write an algebraic equation and solve. Show work!

6.



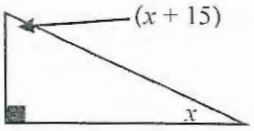
Equation: x + 32 + 63 = 180

Work:

x + 95 = 180
−95 −95
x = 85°

x = 85°

7.



Equation: x + (x + 15) + 90 = 180

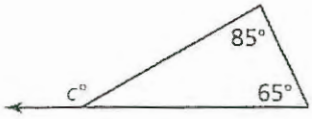
Work:

2x + 105 = 180
−105 −105
$\frac{2x}{2} = \frac{75}{2}$
x = 37.5°

x = 37.5° x + 15 = 52.5°

Find the measure of the exterior angle. Show algebraic work.

8.

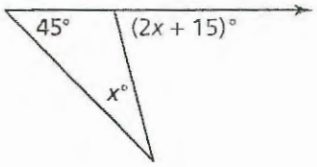


$85 + 65 = C$

$150 = C$

$c =$ 150°

9.



Equation: $45 + x = 2x + 15$

Work:

$-x \quad -x$

$45 = x + 15$

$-15 \quad -15$

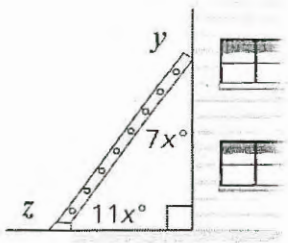
$30 = x$

$x =$ 30°

$2x + 15 =$ 75°

Part III: Problem Solving.

10. A ladder leaning against a wall forms a triangle and exterior angles with the wall and the ground. What are the measures of exterior angles y and z? Use an equation to justify or prove your answer.



Work for x:

$7x + 11x + 90 = 180$

$18x + 90 = 180$

$-90 \quad -90$

$18x = 90$

$x = 5$

$x =$ 5°

Work for y:

$7x + y = 180$

$35 + y = 180$

$-35 \quad -35$

$y = 145$

$y =$ 145°

Work for z:

$11x + z = 180$

$55 + z = 180$

$-55 \quad -55$

$z = 125$

$z =$ 125°