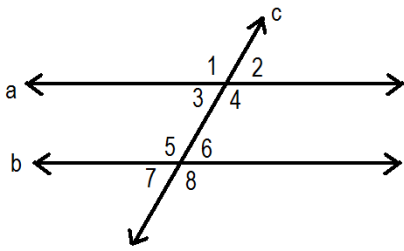


Chapter 3 Review

Use the diagram below for Questions 1-6



For questions 1-3: Fill in the blanks

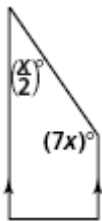
1. Angle 3 and Angle 5 are same-side interior angles.
2. Angle 1 and Angle 8 are alternate exterior angles.
3. Angle 3 and Angle 7 are corresponding angles.

For questions 4-6: Circle the correct answer.

4. If $a \parallel b$ then Angle 4 and Angle 5 are (congruent or supplementary).
5. If $a \parallel b$ then Angle 2 and Angle 8 are (congruent or supplementary).
6. If $a \parallel b$ then Angle 2 and Angle 6 are (congruent or supplementary).

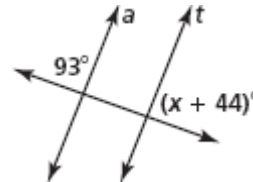
For Questions 7 and 8: Find the value of x . Then find the measure of each angle.

7.



$$\begin{aligned} (x/2) + 7x &= 180 \\ x + 14x &= 360 \\ 15x &= 360 \\ x &= 24 \\ (x/2)^\circ &= 12^\circ \\ (7x)^\circ &= 168^\circ \end{aligned}$$

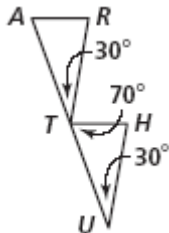
8.



$$\begin{aligned} x + 44 + 93 &= 180 \\ x + 43 &= 180 \\ x &= 137 \\ (x + 44)^\circ &= 181^\circ \end{aligned}$$

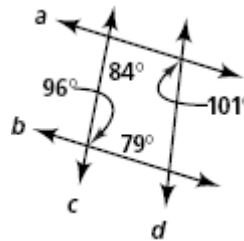
For Question 9 and 10: Which lines or segments are parallel? Justify your answer.

9.



\overline{RT} and \overline{UH} are parallel. It is because corresponding angles are congruent

10.

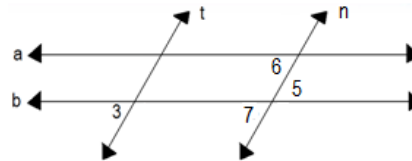


$a \parallel b$ It is because the same-side interior angles are supplementary

11. Fill in the missing information in the proof below.

Given: $t \parallel n$, $\angle 3 \cong \angle 6$

Prove: $a \parallel b$



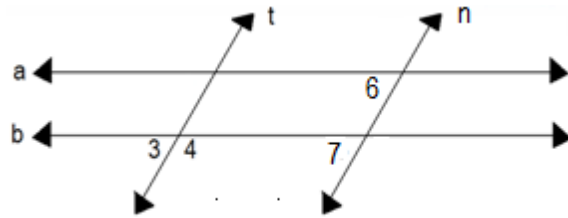
Statements	Reasons
1. $a \parallel b$, $\angle 3 \cong \angle 6$	1. given
2. $\angle 3 \cong \angle 7$	2. <u>Corresponding angles are congruent</u>
3. a. $m\angle 3 = m\angle 6$ b. $m\angle 6 = m\angle 7$	3. Definition of Congruent Angles
4. $m\angle 3 = m\angle 7$	4. Substitution Property of Equality
5. $\angle 3 \cong \angle 7$	5. <u>Definition of Congruent Angles</u>
6. $a \parallel b$	6. <u>If two lines and a transversal form congruent corresponding angles, then the two lines are parallel</u>

Name: _____ Date: _____ Period: _____

12. Write a two-column proof

Given: $a \parallel b$, $t \parallel n$

Prove: $\angle 3 \cong \angle 6$



Statements	Reasons
1. $a \parallel b$, $t \parallel n$	1. given
2. $\angle 3 \cong \angle 7$	2. alternate exterior angles are congruent
3. $\angle 6 \cong \angle 7$	3. alternate interior angles are congruent
4. $m\angle 3 = m\angle 7$ $m\angle 6 = m\angle 7$	4. Definition of congruent angles
5. $m\angle 3 = m\angle 6$	5. Substitution property of equality (or Transitive property of equality)
6. $\angle 3 \cong \angle 6$	6. Definition of congruent angles