CHAPTER 2 Practice Test

Write a conjecture that describes the pattern in each sequence. Then use your conjecture to find the next item in the sequence.

1. 15, 30, 45, 60

2. 

Use the following statements to write a compound statement for each conjunction or disjunction. Then find its truth value.

p: $5 < -3$

q: All vertical angles are congruent.

r: If $4x = 36$, then $x = 9$.

3. p and q

8. PROOF Copy and complete the following proof.

Given: $3(x - 4) = 2x + 7$

Prove: $x = 19$

Proof:

Statements	Reasons
a. $3(x - 4) = 2x + 7$	a. Given
b. $3x - 12 = 2x + 7$	b. ?
c. ?	c. Subtraction Property
d. $x = 19$	d. ?

Determine whether each statement is *always*, *sometimes*, or *never* true.

9. Two angles that are supplementary form a linear pair.

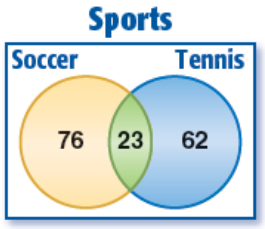
4. $(p \vee q) \wedge r$

5. **PROOF** Write a paragraph proof.

   Given: $\overline{JK} \cong \overline{CB}$, $\overline{KL} \cong \overline{AB}$

   Prove: $\overline{JL} \cong \overline{AC}$

6. **SPORTS** Refer to the Venn diagram that represents the sports students chose to play at South High School last year.

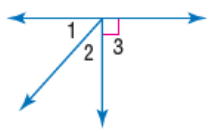


10. If B is between A and C, then $AC + AB = BC$.

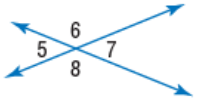
11. If two lines intersect to form congruent adjacent angles, then the lines are perpendicular.

Find the measure of each numbered angle, and name the theorems that justify your work.

12. $m\angle 1 = x$,
    $m\angle 2 = x - 6$



13. $m\angle 7 = 2x + 15$,
    $m\angle 8 = 3x$



Write each statement in if-then form.

14. An acute angle measures less than 90.

15. Two perpendicular lines intersect to form right angles.

16. **MULTIPLE CHOICE** If a triangle has one obtuse angle, then it is an obtuse triangle.

a. Describe the sports that the students in the nonintersecting portion of the tennis region chose.

b. How many students played soccer and tennis?

7. Determine whether the stated conclusion is valid based on the given information. If not, write *invalid*. Explain your reasoning.

Given: If a lawyer passes the bar exam, then he or she can practice law. Candice passed the bar exam.

Conclusion: Candice can practice law.

Which of the following statements is the contrapositive of the conditional above?

A If a triangle is not obtuse, then it has one obtuse angle.

B If a triangle does not have one obtuse angle, then it is not an obtuse triangle.

C If a triangle is not obtuse, then it does not have one obtuse angle.

D If a triangle is obtuse, then it has one obtuse angle.