

Chapter 2 Group Review

Write the next two items in the pattern:



2. $\frac{1}{6}, \frac{2}{7}, \frac{3}{8}, \frac{4}{9}, \dots$

Complete the conjecture:

3. The sum of an even number and an odd number is _____.

4. The square of a whole number is _____.

Determine if the conjecture is true or false. If false, provide a counterexample.5. If C is the midpoint of \overline{AC} , then $\overline{AC} \cong \overline{BC}$.6. If $2x + 3 = 15$, then $x = 6$

7. There are 28 days in February.

8. If two angles are adjacent, then they have a common ray.

Write the converse, inverse, and contrapositive of the conditional statement given. Then find their truth values. (You do NOT have to provide a counterexample if the truth value is false).9. Conditional: If $\angle X$ is a right angle, then $m\angle X = 90^\circ$ Converse:Inverse:Contrapositive:10. Conditional: If x is a whole number, then $x = 2$.Converse:Inverse:Contrapositive:**11. Use the true statements below to determine whether each conclusion is true or false:**

Jenn is a member of the basketball team. When the team practices, Jenn shoots hoops. The team begins practice when the gate to the courts is unlocked. The gates are unlocked at 5:00am on weekdays and 8:00am on Saturdays.

a) The basketball team practices on weekdays only.

b) Jenn shoots hoops on Saturdays

c) Basketball practice starts at the same time every day.

12. Determine if the conjecture is valid by the Law of Detachment.

Given: If Mrs. Garnet goes to Starbucks, then she will buy a Pumpkin Spice Latte. Mrs. Garnet went to Starbucks.

Conjecture: She bought a Pumpkin Spice Latte

13. Determine if the conjecture is valid by the Law of Syllogism.

Given: If a bank robber steals money, then the sheriff will track the bank robber down. If the sheriff tracks the bank robber down, then the bank robber will be arrested. The bank robber stole money.

Conjecture: The bank robber is rich \$\$\$!!!

14. Determine if a true biconditional can be formed from the conditional statement given. If so, write the biconditional statement. If not, provide a counterexample.

Conditional: If a number is divisible by 10, then it ends in a zero.

Fill in the blank(s) to form a true biconditional statement:

15. Two angles are _____ iff the sum of their measures are 90° .

16. The area of a square is equal to s^2 iff the perimeter of the square is _____.

17. Solve the equation. Write the justification for each step.

$$\frac{m}{-5} + 3 = -4.5$$

Use each property to write the next statement in a proof:

18. Definition of Congruent Segments: $AB = EF$

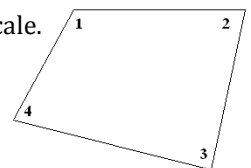
19. Substitution Property of Equality: $3n + 4$ and $n = 7$

20. Definition of Complementary Angles: $\angle 3$ and $\angle 4$ are complementary

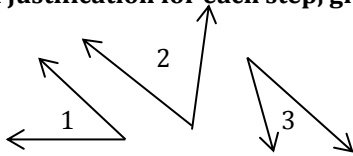
21. Reflexive Property of Congruence: $\triangle XYZ$

22. In a quadrilateral, $m\angle 1 + m\angle 2 + m\angle 3 + m\angle 4 = 360^\circ$. If $m\angle 2 = 2m\angle 1$, $m\angle 3 = m\angle 1 + 10$, and $m\angle 4 = m\angle 1$.

Find $m\angle 3$ in degrees. HINT: Put everything in terms of $m\angle 1$, then solve. Diagram is **NOT** to scale.

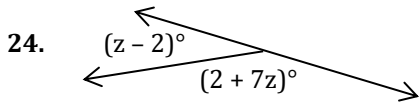


23. Write a justification for each step, given that $\angle 1$ and $\angle 2$ are complementary, and $\angle 1 \cong \angle 3$

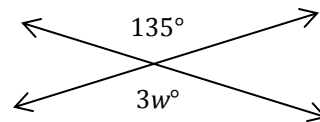


Statements	Reasons
1. $\angle 1$ and $\angle 2$ are complementary	
2. $m\angle 1 + m\angle 2 = 90^\circ$	
3. $\angle 1 \cong \angle 3$	
4. $m\angle 1 = m\angle 3$	
5. $m\angle 3 + m\angle 2 = 90^\circ$	
6. $\angle 3$ and $\angle 2$ are complementary	

Find the value of each variable. Write the theorem or definition you used to write the equation in your first step.



25.



26. Use the given two-column proof to write a **flowchart proof**:

Given: $\angle 1 \cong \angle 3$

Prove: $\angle 4 \cong \angle 5$

Statements	Reasons
1. $\angle 1 \cong \angle 3$	1. Given
2. $\angle 1 \cong \angle 4, \angle 3 \cong \angle 5$	2. Vert \angle Thm.
3. $\angle 1 \cong \angle 5$	3. Trans. Prop. \cong
4. $\angle 4 \cong \angle 5$	4. Trans. Prop. \cong

