Chapter 2 PRETEST

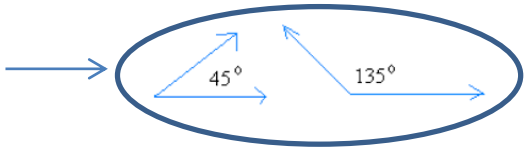
Geometry name_____

1. Make a conjecture about the next item in the sequence.
   1, 3, 7, 13, 21

   A. 31 B. 10
   C. 29 D. 33

2. Make a conjecture about the next item in the sequence: $\frac{3}{8}, \frac{5}{10}, \frac{7}{12}, \frac{9}{14}, \frac{11}{16}, \frac{13}{18}$
   A. $\frac{14}{20}$
   B. $\frac{15}{19}$
   C. $\frac{14}{19}$
   D. $\frac{15}{20}$

3. Determine whether the conjecture is *true* or *false*. Given: $\angle 1$ is an <u>*acute*</u> angle.
   Conjecture: m$\angle 1$ is greater than 0°, but less than 90°.
   A. true
   B. false; $m\angle 1 = 90°$

4. Determine whether the conjecture is *true* or *false*. Given: $\angle 1$ and $\angle 2$ are supplementary.
   Conjecture: $\angle 1$ and $\angle 2$ are a linear pair.
   A. true
   B. false; 

5. Find the next two terms in the sequence 240, –120, 60, –30, ...
   A. 15, –7.5
   B. -15, 7.5
   C. -15, -7.5
   D. 15, 7.5

6. Identify the hypothesis and conclusion. If $2x - 1 = 5$, then $x = 3$.
   A. Hypothesis: $2x - 1 = 5$
   Conclusion: $x \neq 3$
   B. Hypothesis: $2x - 1 \neq 5$
   Conclusion: $x = 3$
   C. Hypothesis: $2x - 1 = 5$
   Conclusion: $x = 3$
   D. Hypothesis: $x = 3$
   Conclusion: $2x - 1 = 5$

7. Which choice shows the statement in if-then form?
   <u>*Quadrilaterals have four sides.*</u>
   A. If a figure has four sides, then it is a quadrilateral.
   B. If a figure is not a quadrilateral, then it does not have four sides.
   C. If a figure is a quadrilateral, then it has four sides.
   D. If a figure does not have four sides, then it is not a quadrilateral.

8. Which choice shows the statement in if-then form? *Mammals have hair.*
A. If an animal is not a mammal, then it does not have hair.
B. If an animal has hair, then it is a mammal.
C. If an animal is a mammal, then it has hair.
D. An animal is not a mammal if it does not have hair.

9. Given the statement, "If a bird is an ostrich, then it cannot fly," which of the following is true?
A. the converse of the statement
B. the contrapositive of the statement
C. the inverse of the statement
D. all of the above

10. Identify the inverse of the statement If a quadrilateral has 4 right angles, then it is a rectangle.

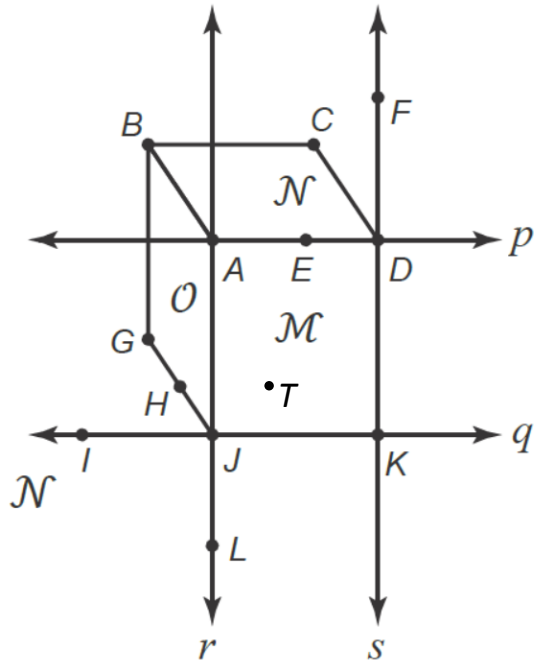
A. If a quadrilateral is a rectangle, then it has 4 right angles.

B. If a quadrilateral is not a rectangle, then it does not have 4 right angles.

C. If a quadrilateral has 4 congruent sides, then it is a rhombus.

D. If a quadrilateral does not have 4 right angles, then it is not a rectangle.

Use the following diagram for 11-15:



11. Which option states the postulate that can be used to show that $\overleftrightarrow{IK}$ intersects $\overleftrightarrow{AL}$ at point *J*?
A. The intersection of two lines does not lie in the same plane.
B. If two lines intersect, then their intersection is exactly one point.
C. The intersection point of two lines lies on a third line, not in the same plane.
D. If two lines intersect, then their intersection point lies in the same plane.

12. Which option states the postulate that can be used to show that *F*, *D*, and *K* are collinear?
A. A line contains at least three points.
B. A line contains only two points.
C. A line contains only three points.
D. A line contains at least two points.

13. Which option states the postulate that can be used to show that G, H, and B are coplanar?
A. If two points lie in a plane, then the entire line containing those points lies in that plane.
B. If two lines intersect, then their intersection lies in exactly one plane.
C. Through any two points on the same line, there is exactly one plane.
D. Through any three points not on the same line, there is exactly one plane.

14. Which option states the postulate that can be used to show that $\overleftrightarrow{ET}$ lies in plane $\mathcal{M}$?
A. Through any two points on the same line, there is exactly one plane.
B. If two points lie in a plane, then the entire line containing those points lies in that plane.
C. Through two points, there is exactly one line in a plane.
D. Any plane contains an infinite number of lines.

15. Which option states the postulate that can be used to show that K and T are collinear?
A. Through any two points, there are many lines.
B. Through any two points, there is exactly one line.
C. A line contains only two points.
D. If two points lie in a plane, then the entire line containing those points lies in that plane.

16. State a conclusion that can be drawn from the statements given using the property indicated.
Given $\overline{AM} \cong \overline{QR}$; Symmetric

A. $\overline{AM} < \overline{QR}$
B. $\mathrm{AM} = \mathrm{QR}$
C. $\overline{QR} \cong \overline{AM}$
D. $\overline{AM} < \overline{AM}$

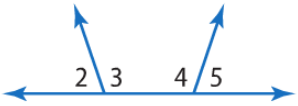
17. Justify the statement with a property of equality or a property of congruence.
If $\overline{BC} \cong \overline{XY}$, and $\overline{XY} \cong \overline{OP}$, then $\overline{BC} \cong \overline{OP}$
A. Symmetric Property
B. Reflexive Property
C. Segment Addition Postulate
D. Transitive Property

18. Name the definition, postulate, or theorem used to justify the following:
Given $\angle \mathrm{LMN} \cong \angle \mathrm{XYZ}$,
Then $\mathrm{m}\angle \mathrm{LMN} = \mathrm{m}\angle \mathrm{XYZ}$.
A. Congruent Complements Theorem
B. Def. of Congruent Angles
C. Congruent Supplements Theorem
D. Angle Addition Postulate

19. Justify the statement with a property of equality or a property of congruence.
$\overline{ST} \cong \overline{ST}$
A. The Congruence Property
B. Transitive Property
C. Symmetric Property
D. Reflexive Property

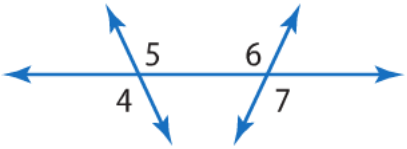
20. State a conclusion that can be drawn from the statements given using the property indicated.
T is between M and V;
Segment Addition Postulate
A. MT + TV = MV
B. MV + TV = MT
C. 2MT = MV
D. MT = TV

21. Find the measure of ∠3 using the congruent supplements theorem, given ∠2 and ∠4 and ∠4 and ∠5 are supplementary, and m∠4 = 117.



A. 117
B. 63
C. 180
D. 107

22. Name the definition, postulate, or theorem used to justify the following:

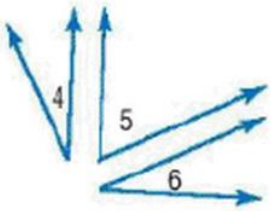


∠4 ≅ ∠5.

A. Congruent supplements theorem
B. Complement Theorem
C. Vertical Angles Theorem
D. Supplement Theorem

23. Theorem 2.12 states that if two angles are congruent and _____, then each angle is a right angle.
A. Supplementary
B. Vertical
C. Complementary
D. Adjacent

24. Name the definition, postulate, or theorem used to justify the following:



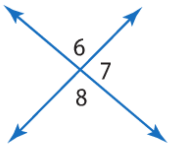
Given: ∠4 and ∠5 are complementary

∠5 and ∠6 are complementary.

Then: ∠4 ≅ ∠6

A. Congruent Supplements Theorem
B. Congruent Complements Theorem
C. Supplement Theorem
D. Complement Theorem

25. Find the measure of ∠8.
m∠6 = 11x + 6
m∠7 = 5x + 30



A. 9
B. 105
C. 75
D. 102