

Assignment 17 Chapter 2 Test.

Reasoning and Proof

Multiple Choice

1. What is the next letter in the sequence?

A, B, D, G, K, . . .

- (A) N (B) O
(C) P (D) Q

2. What conjecture can be made if John is older than Mark, Sue is older than John, and Betty is younger than Sue?

- (A) John is younger than Betty.
(B) Sue is the oldest.
(C) Mark is the youngest.
(D) none of these

3. What is the converse of the given statement?

GIVEN: If $m\angle B = 90^\circ$, then $\angle B$ is a right angle.

- (A) If $m\angle B \neq 90^\circ$, then $\angle B$ is not a right angle.
(B) If $m\angle B = 90^\circ$, then $\angle B$ is not a right angle.
(C) If $\angle B$ is not a right angle, then $m\angle B \neq 90^\circ$.
(D) If $\angle B$ is a right angle, then $m\angle B = 90^\circ$.

4. Which statement's inverse is true?

- (A) If two lines intersect to form a right angle, then they are perpendicular lines.
(B) If $m\angle W$ is less than 45° , then $\angle W$ is acute.
(C) If point K is the midpoint of \overleftrightarrow{JL} , then points J , K , and L are collinear.
(D) If two rays are opposite rays, then they have a common endpoint.

5. If all sides of a polygon are congruent, the polygon is equilateral. All sides of polygon A are 5 inches. Using the Law of Detachment, which conclusion can be made?

- (A) Polygon A is congruent.
(B) Polygon A is equilateral.
(C) All polygon sides are 5 inches.
(D) All polygons are equilateral.

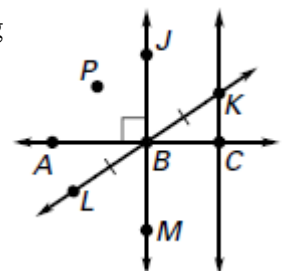
6. If point B is the midpoint of \overline{AC} , then point B bisects \overline{AC} . If point B bisects \overline{AC} , then $\overline{AB} \cong \overline{BC}$. Using the Law of Syllogism, what conclusion can be drawn?

- (A) If point B is the midpoint of \overline{AC} , then $\overline{AB} \cong \overline{BC}$.
(B) If $\overline{AB} \cong \overline{BC}$, then point B bisects \overline{AC} .
(C) If $\overline{AB} \cong \overline{BC}$, then point B is the midpoint of \overline{AC} .
(D) Points A , B , and C are collinear.

7. Which statement is *not* a point, line, or plane postulate?

- (A) A plane contains at least 3 noncollinear points.
(B) If 2 lines intersect, then their intersection is exactly 1 point.
(C) A line contains at least 2 points.
(D) Coplanar points are points that lie on the same plane.

8. Which of the following statements can be determined from the figure?



- (A) $\angle ABL \cong \angle JBK$
(B) Points A , B , and J are collinear.
(C) \overline{JM} bisects \overline{LK} .
(D) $\overleftrightarrow{CK} \perp \overleftrightarrow{AC}$

9. Which property of equality does the statement represent?
GIVEN: For any angles $\angle A$ and $\angle B$, if $m\angle A = m\angle B$, then $m\angle B = m\angle A$.
- (A) distributive (B) transitive
 (C) symmetric (D) reflexive
10. The formula for the area of a circle is $A = \pi r^2$. Use the properties of equality to find the radius of a circle with an area of 100 square inches.
- (A) $\frac{100}{\pi}$ (B) $\frac{10}{\sqrt{\pi}}$
 (C) $\frac{10}{\pi}$ (D) $\frac{100}{\sqrt{\pi}}$
11. Using the Transitive Property of Angle Congruence, if $\angle A \cong \angle B$ and $\angle B \cong \angle C$, then .
- (A) $\angle A \cong \angle C$
 (B) $\angle A$, $\angle B$, and $\angle C$ are right angles
 (C) $\angle A$ and $\angle C$ are supplementary
 (D) $\angle A$ and $\angle C$ are complementary
12. The statement $\overline{XY} \cong \overline{XY}$ illustrates which property?
- (A) Transitive Property of Equality
 (B) Reflexive Property of Segment Congruence
 (C) Substitution Property of Equality
 (D) Symmetric Property of Segment Congruence
13. $\angle P$ and $\angle Q$ are supplementary. If $m\angle P$ is double $m\angle Q$, find $m\angle P$ and $m\angle Q$.
- (A) $m\angle P = 30^\circ$, $m\angle Q = 60^\circ$
 (B) $m\angle P = 60^\circ$, $m\angle Q = 30^\circ$
 (C) $m\angle P = 60^\circ$, $m\angle Q = 120^\circ$
 (D) $m\angle P = 120^\circ$, $m\angle Q = 60^\circ$

Gridded Answer

14. At 1:00 P.M. a thermometer reads 76° . A cold front moves in and drops the temperature 1.5° every half hour for the next 3.5 hours. What is the temperature at 4:30 P.M.?

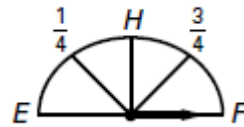
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	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Short Response

15. What is the next number in the sequence: 3, 9, 21, 45, 93, ...? Describe how to find the next number in the sequence.

Extended Response

16. A full 20-gallon gas tank has a gauge as shown.



You travel until you have a $\frac{1}{4}$ tank of fuel remaining.

- a. How many degrees did the gauge turn?
 b. How many gallons of gas are left in the tank?
 c. You continue traveling until the tank is empty. You fill up the tank to $\frac{7}{8}$ full.

How many degrees did the gauge turn while filling up?

d. How many gallons did you get?

