

Chapter 2 Test

KEY

A

Name: _____

Geometry

Circle the **best** answers.

1. What group of items is **next** in the pattern?

○ ● ○ ○ ● ● ○ ○ ○ ●

A ● ● ● ●

C ● ● ●

B ● ● ●

D ●

If the endpoints of a segment are (7, 4) and (9, 8)

2. Find the **length** of the segment in **SRF**.

$$L = \sqrt{2^2 + 4^2} = \sqrt{4 + 16} = \sqrt{20} = 2\sqrt{5}$$

3. Find the **midpoint** of the segment.

$$M\left(\frac{7+9}{2}, \frac{4+8}{2}\right) = \left(\frac{16}{2}, \frac{12}{2}\right) = (8, 6)$$

4. What is the **inverse** of "If there are clouds in the sky, then it is raining"?

A If it is raining, then there are clouds in the sky.

B If there are no clouds in the sky, then it is not raining.

C If it is raining, then there are no clouds in the sky.

D If it is not raining, then there are no clouds in the sky.

5. Use the **Law of Detachment** to reach a valid conclusion:

If a car is parked illegally, THEN IT GETS A TICKET (FOR EXAMPLE)

JOHN'S CAR IS PARKED ILLEGALLY.

JOHN'S CAR GETS A TICKET.

Circle the **best** answers.

6. What is the **next item** in the pattern? 1, -2, 4, -8, ...

A -16

C 4

B -4

D 16

7. Which is a **counterexample** that shows that the following conjecture is **false**:

If $\angle 1$ and $\angle 2$ are supplementary, then both angles are congruent.

F $m\angle 1 = 45^\circ$ and $m\angle 2 = 45^\circ$

H $m\angle 1 = 90^\circ$ and $m\angle 2 = 90^\circ$

G $m\angle 1 = 53^\circ$ and $m\angle 2 = 127^\circ$

J $m\angle 1 = 100^\circ$ and $m\angle 2 = 100^\circ$

8. Write "Three noncollinear points determine a plane" as a **conditional statement** in if-then form.

IF 3 POINTS ARE NONCOLLINEAR, THEN THEY DETERMINE A PLANE.

9. What is the **converse** of the conditional statement

"If a number is divisible by 6, then it is divisible by 3"

A If a number is divisible by 3, then it is divisible by 6.

B If a number is not divisible by 6, then it is not divisible by 3.

C If a number is not divisible by 3, then it is not divisible by 6.

D If a number is not divisible by 6, then it is divisible by 3.

10. Given: If one angle of a triangle is a right angle, then the other two angles are acute.

A triangle has a right angle.

What **conclusion** can be drawn?

F One of the other two angles is 90° .

G One of the other two angles is obtuse.

H All three angles are acute.

J Not here.

Circle the **best** answers.

11. What is the **next item** in the pattern?



12. Which conjecture is **always true**?

F Intersecting lines form 4 linear pairs of angles.

G Intersecting lines form 4 pairs of non-adjacent angles.

H Intersecting lines form 4 pairs of congruent angles.

J Not here

13. Identify the **hypothesis** and **conclusion** of the statement

"There are clouds in the sky if it is raining"

H: **IT IS RAINING** _____

C: **THERE ARE CLOUDS IN THE SKY** _____

14. Find the **next item** in the pattern. 2, 5, 7, 12, 19, **31**

15. Show that the conjecture is false by **drawing** a counterexample:

"If two angles are supplementary, then they are also adjacent."



16. Write the **contrapositive** of the conditional statement

"If two angles are congruent, then they have the same measure."

**IF TWO ANGLES DO NOT HAVE THE SAME MEASURE,
THEN THEY ARE NOT CONGRUENT.**

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A

17. Is this a valid **syllogism**?

Given: If a point is a midpoint of a segment, then it is between the two endpoints.

If a point is between two endpoints, **then all three points are collinear.**

If a point is a midpoint of a segment, **then it divides the segment into two congruent segments.**

Yes/No: No

18. Determine if the conjecture is valid by the **Law of Detachment**:

a) If a ray bisects an angle, two congruent angles are formed.

b) \overrightarrow{YW} bisects $\angle XYZ$.

c) $\angle XYW \cong \angle WYZ$

Yes/No: YES

19. Identify the **hypothesis** and **conclusion** of the statement:

"An angle with a measure of less than 90 is an acute angle."

H: AN ANGLE HAS A MEASURE OF LESS THAN 90.

C: THE ANGLE IS ACUTE

20. Write the **inverse** of the conditional statement:

"If the sum of two whole numbers is even, then both numbers are even."

IF THE SUM OF TWO WHOLE NUMBERS IS NOT EVEN,

THEN BOTH NUMBERS ARE NOT EVEN.

