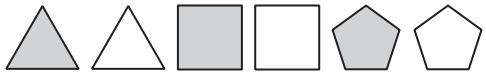
NAME _____ DATE _____ PERIOD _____

2 Chapter 2 Test, Form 2A

SCORE _____

Write the letter for the correct answer in the blank at the right of each question.

1. Make a conjecture about the next object in this sequence.



A  **B**  **C**  **D**  **1.** B

2. If $|n|$ is a positive number, then n is a negative number. Which of the following would be a counterexample?

F -10 **G** -4 **H** -1 **J** 10 **2.** J

3. If p is true and q is false, what is the truth value of p and q?

A true **B** false **C** 0 **D** 1 **3.** B

For Exercises 4 and 5, use the truth table.

p	q	$\sim q$	$p \wedge \sim q$
T	T		
T	F		
F	T		
F	T		

4. Which would be the values in the $\sim q$ column?

F F F T T **H** F T F T

G T T F F **J** T F T F **4.** H

5. Which would be the values in the $p \wedge \sim q$ column?

A F T F F **C** T T F T

B F T T F **D** T F T T **5.** A

6. Identify the conclusion of the statement *Jack will go to school if today is Monday*.

F Jack will go to school. **H** Today is Monday.

G Jack will not go to school. **J** Today is not Monday. **6.** F

7. Identify the inverse of the following statement.

If $x = 2$, then $x + 3 = 5$.

A If $x + 3 = 5$, then $x = 2$. **C** If $x \neq 2$, then $x + 3 \neq 5$.

B If $x + 3 \neq 5$, then $x \neq 2$. **D** $x = 2$ and $x + 3 = 5$. **7.** C

8. Identify the contrapositive of the following statement.

If $x = 2$, then $x + 3 = 5$.

F If $x + 3 = 5$, then $x = 2$. **H** If $x \neq 2$, then $x + 3 \neq 5$.

G If $x + 3 \neq 5$, then $x \neq 2$. **J** $x = 2$ and $x + 3 = 5$. **8.** G

9. What law can be used to determine that the conclusion is valid based on the given statements?

Given: If an angle is acute, then it cannot be obtuse. $\angle A$ is acute.
Conclusion: $\angle A$ cannot be obtuse.

A Law of Detachment **C** Law of Converse

B Law of Syllogism **D** The conclusion is not valid. **9.** A

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2 Chapter 2 Test, Form 2A *(continued)*

10. Which law can be used to determine that the conclusion is valid based on the given statements?
Given: If a figure has 4 right angles, then the figure is a rectangle. A rectangle has 2 pairs of parallel sides.
Conclusion: If a figure has 4 right angles, then the figure has 2 pair of parallel sides.

F Law of Detachment **H** Law of Converse
G Law of Syllogism **J** The conclusion is invalid. **10.** G

11. Which best describes the statement *If two planes intersect, then their intersection is a point*?

A always true **B** sometimes true **C** never true **D** cannot tell **11.** C

12. Which of the following is an essential part of a good proof?

F an if-then statement **H** using the contrapositive
G a postulate **J** deductive reasoning **12.** J

13. Choose the property that justifies the following statement.
If $x = 2$ and $x + y = 3$, then $2 + y = 3$.

A Reflexive **B** Symmetric **C** Transitive **D** Substitution **13.** D

14. Choose the property that justifies the statement $m\angle A = m\angle A$.

F Reflexive **G** Symmetric **H** Transitive **J** Substitution **14.** F

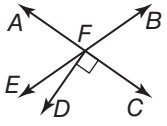
15. Choose the property that justifies the statement *If* $\overline{GH} \cong \overline{FD}$, *then* $\overline{FD} \cong \overline{GH}$.

A Reflexive **C** Transitive
B Symmetric **D** Definition of congruent segments **15.** B

16. On a line, if $XY = 6$, $YZ = 4$, and $XZ = 2$, which point is between the other two?

F X **G** Y **H** Z **J** cannot tell **16.** H

For Exercises 17 and 18, use the figure at the right.



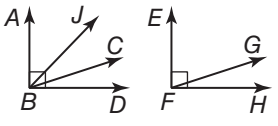
17. If $m\angle BFC = 70$, find $m\angle EFD$.

A 10 **C** 35
B 20 **D** 70 **17.** B

18. If $m\angle AFB = 5x - 10$ and $m\angle BFC = 3x + 20$, find x.

F 10 **G** 15 **H** 21.25 **J** $23.\overline{3}$ **18.** H

For Exercises 19 and 20, use the figures at the right.



19. If $\angle ABC \cong \angle EFG$, and $m\angle ABC = 72$, find $m\angle GFH$.

A 18 **C** 90
B 72 **D** 108 **19.** A

20. If $m\angle ABJ = 28$, $\angle ABC \cong \angle DBJ$, find $m\angle JBC$.

F 90 **G** 56 **H** 45 **J** 34 **20.** J

Bonus $\angle A$ and $\angle B$ are vertical angles, $m\angle A = 9x + 10$, and $m\angle B = 7x + 24$. Find $m\angle A$. **B:** 5