

Name: Key

Date:

L3 Geometry Chapter 2 Review 2.1-2.5

1. Use the pattern to predict the following. Show math reasoning.



A. The 46th figure.

$\frac{46}{4} = 11 \text{ R } 2$

44 → 48

11 R 2

B. The 153rd figure.

$\frac{153}{4} = 38 \text{ R } 1$

152 → 156

C. The 279th figure.

$\frac{279}{4} = 69 \text{ R } 3$

276 → 280

2. What is the pattern? Predict the next two numbers in the sequence.

A. -21, -13, -26, -18, -36, -28, -56, -48

(+8, -18, +8, -28, +8, -28, +8)

B. 88, 22, 38, 9.5, 25.5, 12.75

(-66, +16, -18.5, +16)

C. 1, 12, 123, 1234, 12345, 123456

3. Find a counterexample.

- A. All balls are spheres. FOOTBALL, RUGBY BALL
- B. When it rains, it pours. LIGHT SHOWER, DRIZZLE
- C. All Hingham high students are carnivores. VEGETARIANS, VEGANS (HERBIVORES?)

4. Write the statement as a conditional.

- A. Whales are cool.
IF AN ANIMAL IS A WHALE, IT IS COOL.
- B. Roses are beautiful flowers.
IF A FLOWER IS A ROSE, IT IS BEAUTIFUL.
- C. The world's largest trees are giant sequoias.
IF A TREE IS THE WORLD'S LARGEST, IT IS A SEQUOIA

5. Write the contrapositive.

If a circle has a radius of 8 then its circumference is 16π .

IF A CIRCLE'S CIRCUMFERENCE IS NOT 16π , THEN IT DOES NOT HAVE A RADIUS OF 8

6. Write the converse.

If an integer ends with 0, then it is divisible by 2.

IF AN INTEGER IS DIVISIBLE BY 2, THEN IT ENDS WITH 0. (FALSE)

7. Write the converse.

If an angle is acute then its measure is between 0 and 90.

IF AN ANGLE'S MEASURE IS BETWEEN 0 & 90, THEN IT IS ACUTE

#7 8. Is #8 true or false? T If true then write as a biconditional. If false then write a counterexample.

AN ANGLE IS ACUTE IF AND ONLY IF ITS MEASURE IS BETWEEN 0 AND 90

9. Given the conditional, write the inverse.

If you tell me to do my chores then I won't do them.

IF YOU DON'T TELL ME TO DO MY CHORES, THEN I WILL DO THEM

10. Biconditionals are formed when the CONDITIONAL and CONVERSE are true.

11. All DEFINITIONS/ BICONDITIONALS are reversible. CONDITIONALS and ~~CONJUNCTIONS~~ are not always.

12. Match the statement with the property it illustrates.

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| 1. $m\angle DEF = m\angle DEF$ (B) | (A) Symmetric Property of Equality |
| 2. If $\overline{PQ} \cong \overline{ST}$, then $\overline{ST} \cong \overline{PQ}$ (E) | (B) Reflexive Property of Equality |
| 3. $\overline{XY} \cong \overline{XY}$ (D) | (C) Transitive Property of Equality |
| 4. If $\angle J \cong \angle K$ and $\angle K \cong \angle L$, then $\angle J \cong \angle L$ (F) | (D) Reflexive Property of Congruence |
| 5. If $PQ = QR$ and $QR = RS$, then $PQ = RS$ (C) | (E) Symmetric Property of Congruence |
| 6. If $m\angle X = m\angle Y$, then $m\angle Y = m\angle X$ (A) | (F) Transitive Property of Congruence |

13. Name the property demonstrated.

7. $\angle ABC \cong \angle ABC$ REFLEXIVE PROP. OF CONGRUENCE
8. If $m\angle B = m\angle D$ and $m\angle D = m\angle F$, then $m\angle B = m\angle F$. TRANSITIVE PROP. OF EQUALITY
9. If $\overline{GH} \cong \overline{JK}$, then $\overline{JK} \cong \overline{GH}$. SYMMETRIC PROP. OF CONGRUENCE
- If $AB = CD$, then $AB + EF = CD + EF$. ADDITION PROP. OF EQUALITY
- If $m\angle C = 90^\circ$, then $2(m\angle C) + 15^\circ = 2(90^\circ) + 15^\circ$. SUBSTITUTION PROP.
- If $XY = YZ$, then $3 \cdot XY = 3 \cdot YZ$. MULTIPLICATION PROP. OF EQUALITY