

# L3 Geometry Mid term Review

## Chapter 2

Name KEY

Date \_\_\_\_\_

Find the next 2 numbers in the pattern  $\times (-2)$

①  $3, 8, 15, 24, \textcircled{35}, \textcircled{48}$

②  $-3, 6, -12, 24, \textcircled{-48}, \textcircled{96}$

③ Find the shape of the 47th term in the sequence



THIS SEQUENCE  $\times 11$  MAKES THE STAR THE 44TH, SO  $\triangle$  IS 47TH

④ Find the 84th term in the sequence



THIS SEQUENCE  $\times 28$  MAKES  $\triangle$  THE 84TH TERM

⑤ Rewrite as a conditional statement:

- Angles that form a linear pair are supplementary.

If angles form a linear pair then they are supplementary.

⑥ Circle the hypothesis and underline the conclusion.

- If a figure is a square then it is a parallelogram.

⑦ Given the conditional statement:

If a quadrilateral is a rhombus, then it is a parallelogram. TRUE

Find the:

NEGATE Inverse: If a QUAD. is NOT a rhombus, then it is NOT a parallelogram. FALSE

SWITCH Converse: If a quad. is a parallelogram, then it is a rhombus. FALSE

NEGATE AND SWITCH Contrapositive: If a quad is NOT a parallelogram, then it is NOT a rhombus. TRUE

⑧ Write the biconditional statement. If it is not possible, then state why.

~~A quadrilateral is a rhombus if and only if it is a parallelogram~~

IT'S NOT POSSIBLE TO WRITE A BICONDITIONAL BECAUSE IT HAS TO WORK FORWARDS & BACKWARDS. IN THE PROBLEMS ABOVE, THE CONDITIONAL IS TRUE AND THE CONVERSE IS FALSE, SO IT DOESN'T WORK BOTH WAYS.

9 Rewrite the biconditional statement as a conditional statement.

A polygon is a triangle if and only if it has 3 sides

If a polygon is a triangle then it has 3 sides.  
If a polygon has 3 sides then it is a triangle.

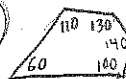
10 Determine the truth value for each statement. If something is false, then you must provide a counter example.

a) If two angles are supplementary, then their sum is  $180^\circ$ . (T)

b) If you score a goal then you are playing soccer or hockey. (F)

WATER POLO, LACROSSE

c) If a polygon has more than 4 sides, then its interior angles are all greater than  $90^\circ$ . (F)



11 Use the Law of Syllogism to make a conclusion:

TRANSITIVE PROPERTY

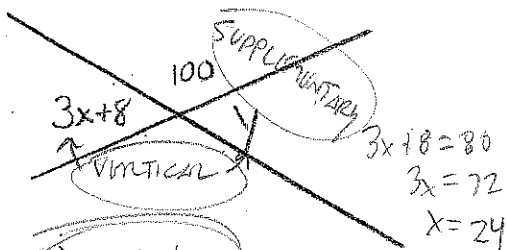
If two angles are vertical, then they are congruent.

If two angles are congruent, then their measures are equal.

If two angles are vertical, then their measures are equal.

Find the value of the missing variables

12



$$3x + 8 = 100$$

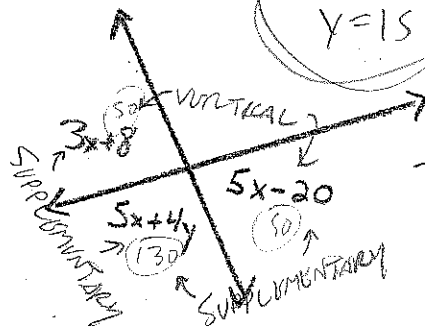
$$3x = 92$$

$$x = 30.67$$

$$x = 24$$

$$y = 80$$

13



$$x = 14$$

$$y = 15$$

$$70 + 4y = 130$$

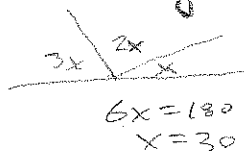
$$4y = 60$$

$$y = 15$$

$$2x = 28$$

$$x = 14$$

14 3 angles are supplementary where the largest angle is 3 times as large as the smallest angle. The smallest angle is  $\frac{1}{2}$  the size of the remaining angle. What are the three angles?



$$6x = 180$$

$$x = 30$$

