Name _____ Date _____ Pd _____

CYU 2.4 Algebraic Reasoning

☑ *Use when you get it right all by yourself*

S Use when you did it all by yourself, but made a silly mistake

H Use when you could do it alone with a little help from teacher or peer

G Use when you completed the problem in a group

X Use when a question was attempted but wrong (get help)

N Use when a question was not even attempted

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Addition POE	1	2, 3	6 – 8
Subtraction POE	1	2, 3	6 – 8
Multiplication POE		2, 3	6 - 8
Division POE	1	2, 3	6 - 8
Substitution POE		2, 3	6 - 8
Distributive Property		2, 3	6 - 8
Reflexive Property	5		6 - 8
Symmetric Property	5		6 - 8
Transitive Property	5		6 - 8

1. Write the property that justifies each step.

   $3x - 12 = 7x + 8$ _____

   $-4x - 12 = 8$ _____

   $-4x = 20$ _____

   $x = -5$ _____

2. Solve the equation (similar to #1 and justify each step like #1).

   a) $44 - 2(3x + 4) = -18x$ b) $4(5x - 9) = -2(x + 7)$

3. Solve the equation for y. Justify each step with a property.

   a) $\frac{1}{2}x - \frac{3}{4}y = -2$

   b) $12 - 3y = 30x + 6$

4. Solve the equation for "h" and justify each step. $S = 2\pi r^2 + 2\pi h$

5. Name the property of equality that the statement illustrates.

   a. $m\angle Z = m\angle Z$ _____

   b. If x = y, then y = x. _____

   c. If BC = XY and XY = 8, then BC = 8. _____

6. In the diagram, $m\angle ABD = m\angle CBE$. Show that $m\angle 1 = m\angle 3$.

7. In the diagram. AC = BD. Show that AB = CD.

8. In the figure, $\overline{ZY} \cong \overline{XW}, ZX = 5x + 17, YW = 10 - 2x,$ and $YX = 3.$
   Find ZY and XW.

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give
yourself.

1 2	3 4 5	6 7	8
Basic	Intermediate	Advanced	Solved ALL!