

Geo Ch 6 Review (continued)

5. $m\angle 1 = 37^\circ$ If $2H$, alternate interior $\angle$'s $\cong$
 $m\angle 2 + 37 = 63^\circ$
 $\begin{array}{r} 63^\circ \\ -37^\circ \\ \hline 26^\circ \end{array}$ (63° is an exterior $\angle$ of Δ)
 $m\angle 2 = 26^\circ$
 $m\angle 3 = 26^\circ$ If $2H$, alternate interior $\angle$'s $\cong$

6. $m\angle 1 = 38^\circ$ If $2H$, alternate interior $\angle$'s $\cong$
 $m\angle 3 = 99^\circ$ Opposite $\angle$'s of $\square \cong$
 $m\angle 2 + 99 + 38 = 180$
 $m\angle 2 + 137 = 180$
 $\begin{array}{r} 180 \\ -137 \\ \hline 43^\circ \end{array}$
 $m\angle 2 = 43^\circ$

7. $m\angle 2 = 79^\circ$ Opposite $\angle$'s of $\square$ are $\cong$
 $m\angle 1 + 79 = 180$ $m\angle 2 = 101^\circ$
 $\begin{array}{r} 180 \\ -79 \\ \hline 101^\circ \end{array}$ Opposite $\angle$'s of $\square \cong$
 $m\angle 1 = 101^\circ$

8. Yes; If a quadrilateral has 2 pairs of opposite $\angle$'s $\cong$, then the quad is a $\square$.

9. Yes; If a quadrilateral has 2 pairs of opposite sides $\cong$, then the quad is a $\square$.

10. Not enough info to determine if it's a $\square$... Vertical $\angle$'s do not prove $\parallel$

quad is a $\square$

11. Yes; If a quad has diagonals that bisect each other, then the $\uparrow$

11b) $4x + 2x + 6 = 180$

$$\begin{array}{r} 6x + 6 = 180 \\ -6 \quad -6 \\ \hline 6x = 174 \end{array}$$

$$\begin{array}{r} 6x = 174 \\ \div 6 \quad \div 6 \\ \hline x = 29 \end{array}$$

$$3y - 20 + 4y + 4 = 180$$

$$\begin{array}{r} 7y - 16 = 180 \\ +10 \quad +16 \\ \hline 7y = 196 \end{array}$$

$$\begin{array}{r} 7y = 196 \\ \div 7 \quad \div 7 \\ \hline y = 28 \end{array}$$

$$(29, 28)$$

12. $3x = 3y - 3 (\div 3)$

$$\begin{array}{r} 4x - 2 = 3y - 1 \\ \hline x = y - 1 \end{array}$$

$$4(y - 1) - 2 = 3y - 1$$

$$4y - 4 - 2 = 3y - 1$$

$$4y - 6 = 3y - 1$$

$$\begin{array}{r} 4y - 6 = 3y - 1 \\ -3y \quad -3y \\ \hline y - 6 = -1 \end{array}$$

$$\begin{array}{r} y - 6 = -1 \\ +6 \quad +6 \\ \hline y = 5 \end{array}$$

$$x = 5 - 1 = 4 \quad (4, 5)$$

13. $m\angle 1 + 56 = 180$

$$\begin{array}{r} 180 \\ -56 \quad -56 \\ \hline m\angle 1 = 124^\circ \end{array}$$

$$2(m\angle 2) + 124 = 180$$

$$\begin{array}{r} 180 \\ -124 \quad -124 \\ \hline 2(m\angle 2) = 56 \end{array}$$

$$\begin{array}{r} 2(m\angle 2) = 56 \\ \div 2 \quad \div 2 \\ \hline m\angle 2 = 28^\circ \end{array}$$

$$m\angle 3 + 28 = 90$$

$$\begin{array}{r} 90 \\ -28 \quad -28 \\ \hline m\angle 3 = 62^\circ \end{array}$$

$$m\angle 3 = 62^\circ$$

14. $m\angle 1 = 60^\circ$ Each diagonal of a RH bisects 2 $\angle$'s

$m\angle 2 = 90^\circ$ Diagonals of RH are $\perp$

$$m\angle 3 + 60 = 90$$

$$\begin{array}{r} 90 \\ -60 \quad -60 \\ \hline m\angle 3 = 30^\circ \end{array}$$

$$m\angle 3 = 30^\circ$$

15a) $m\angle 1 = 90^\circ$ Diagonals of a K are $\perp$

$$m\angle 2 + 65 = 90$$

$$\begin{array}{r} 90 \\ -65 \quad -65 \\ \hline m\angle 2 = 25^\circ \end{array}$$

$$m\angle 2 = 25^\circ$$