

3.2 Theorems About Perpendicular Lines

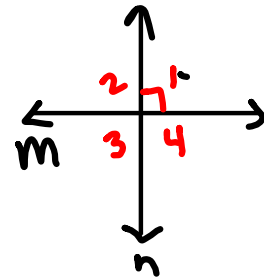
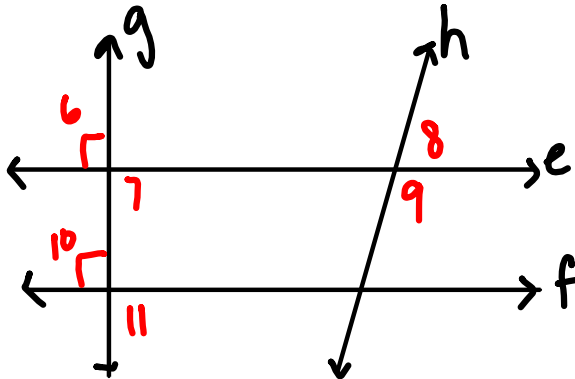
Words: All right angles are congruent.

Symbols: If $m\angle A = 90^\circ$ and $m\angle B = 90^\circ$, then $\angle A \cong \angle B$.

Words: If two lines are perpendicular, then they intersect to form four right angles.

Symbols: if $n \perp m$, then $m\angle 1 = 90^\circ$, $m\angle 2 = 90^\circ$, $m\angle 3 = 90^\circ$, and $m\angle 4 = 90^\circ$.

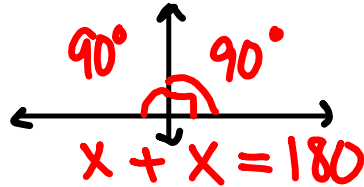
Checkpoint in the middle of page 115.



1. True, all right angles are \cong .
2. True, if 2 lines are \perp , then they form 4 right angles and all right angles are \cong .
3. False
4. True, if 2 lines are \perp , then they form 4 right angles, and all right angles are \cong .
5. False
6. True, if 2 lines are \perp , then they form 4 right angles, and all right angles are \cong .

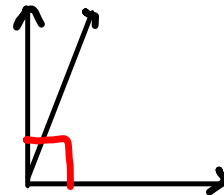
Words: If two lines intersect to form adjacent congruent angles, then the lines are perpendicular.

Symbols: If $\angle 1 \cong \angle 2$, then $\overleftrightarrow{AC} \perp \overleftrightarrow{BD}$.



Words: If two sides of adjacent acute angles are perpendicular, then the angles are complementary.

Symbols: If $\overrightarrow{EF} \perp \overrightarrow{EH}$, then $m\angle 3 + m\angle 4 = 90^\circ$.



Checkpoint on the bottom of page 116.

$$7. \frac{5x}{5} = \frac{90}{5}$$

$$x = 18$$

$$8. \begin{array}{r} 36 + 9y = 90 \\ -36 \quad -36 \end{array}$$

$$\frac{9y}{9} = \frac{54}{9}$$

$$y = 6$$

$$9. z + z = 90$$

$$\frac{2z}{2} = \frac{90}{2}$$

$$z = 45$$