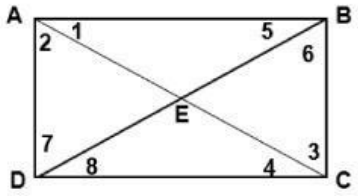
M A T H E M A T I C S 9

Name: _____ **Score:** _____

Grade Level/Section: _____ **Date:** _____

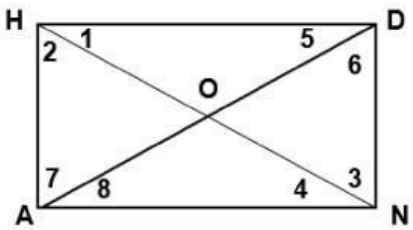
WORKSHEET

Properties of Rectangle



		If	Then
1.) Opposite sides are parallel and equal.	$AB \parallel DC$, $AB \cong DC$	$AB = 15$	$DC = 15$
	$AD \parallel BC$, $AD \cong BC$	$AB = 10$	$DC = 10$
2.) Each interior angle is equal to 90°	$\angle A = 90°, \angle B = 90°,$ $\angle C = 90°, \angle D = 90°$		
3.) The sum of all the interior angles is equal to 360 degrees	$\angle A + \angle B + \angle C + \angle D = 360°$		
4.) The diagonals bisect each other. Both the diagonals have the same length.	$AC \cong BD$	$AC = 20$	$BD = 20$
	$AE \cong CE$	$AE = 10$	$CE = 10$
	$DE \cong BE$	$DE = 10$	$BE = 10$
5.) The diagonals of rectangle do not bisect the angles. However, it will split each vertex angle into two adjacent complementary angles.	Adjacent Complementary Angles (sum = 90°) $\angle 1$ & $\angle 2$, $\angle 1 + \angle 2 = 90$ $\angle 3$ & $\angle 4$, $\angle 3 + \angle 4 = 90$ $\angle 5$ & $\angle 6$, $\angle 5 + \angle 6 = 90$ $\angle 7$ & $\angle 8$, $\angle 7 + \angle 8 = 90$	 $\angle 1 = 40°$ $\angle 3 = 50°$ $\angle 5 = 40°$ $\angle 7 = 50°$	 $\angle 2 = 50°$ $\angle 4 = 40°$ $\angle 6 = 50°$ $\angle 8 = 40°$
6.) The alternate interior angles are congruent.	Alternate interior angles $\angle 1 \cong \angle 4$ $\angle 2 \cong \angle 3$ $\angle 5 \cong \angle 8$ $\angle 6 \cong \angle 7$	 $\angle 1 = 30°$ $\angle 2 = 60°$ $\angle 5 = 30°$ $\angle 6 = 60°$	 $\angle 4 = 30°$ $\angle 3 = 60°$ $\angle 8 = 30°$ $\angle 7 = 60°$

Directions: Complete the table below using the rectangle



	If	Then :			
SIDES	1.) $HD = 30$	$AN =$			
	2.) $HA = 17$	$DN =$			
	3.) $HD = 5x \text{ and } AN = 2x + 9$	$x =$	$HD =$	$AN =$	
	4.) $HA = 6x + 3 \text{ and } DN = 9x - 36$	$x =$	$HA =$	$DN =$	
DIAGONALS	5.) $HO = 12$	$ON =$			
	6.) $HN = 18$	$DA =$			
	7.) $AD = 22$	$ON =$			
	8.) $HN = 10$	$HN + DA =$			
	9.) $AO = 2x + 8 \text{ and } DO = 4x$	$x =$	$AO =$	$DO =$	$DA =$
	10.) $HN = 4x + 20 \text{ and } ON = 3x$	$x =$	$HN =$	$ON =$	
ANGLES	11.) $\angle 1 = 25$	$\angle 4 =$			
	12.) $\angle 5 = 30$	$\angle 8 =$			
	13.) $\angle 2 = 70$	$\angle 3 =$			
	14.) $\angle 6 = 85$	$\angle 7 =$			
	15.) $\angle 2 = 9x - 5 \text{ and } \angle 3 = 4x + 20$	$x =$	$\angle 2 =$	$\angle 3 =$	$\angle 4 =$

Reference: Grade 9 Learning Module for Junior High School Mathematics