

# Key

**R**

Steps	Reasons
$m\angle 1 = 48$	Given
$m\angle 3 = 48$	$\angle 1$ and $\angle 3$ Vertical

**U**

Steps	Reasons
$m\angle 1 = 48$	Given
$m\angle 4 = 180 - 48$	$\angle 1$ and $\angle 4$ Supplementary arithmetic.
$m\angle 4 = 132$	

**V**

Steps	Reasons
$m\angle 6 = 40^\circ$	Given
$m\angle 5 = 90 - 40$	$\angle 5$ and $\angle 6$ are complementary.
$m\angle 5 = 50^\circ$	

**A**

Steps	Reasons
$m\angle 7 = 54^\circ$	Given
$m\angle 8 = 90 - 54$	$\angle 7$ and $\angle 8$ are complementary.
$m\angle 8 = 36^\circ$	

**Y**

Steps	Reasons
$m\angle 7 = 59^\circ$	Given
$m\angle 8 = 90 - 59$	$\angle 7$ and $\angle 8$ are complementary
$m\angle 8 = 31$	
$m\angle 8 = m\angle 6$	$\angle 6$ and $\angle 8$ are vertical angles
$m\angle 6 = 31^\circ$	Substitution

**I**

Steps	Reasons
$m\angle 5 = 57^\circ$	Given
$m\angle 5 = m\angle 7$	$\angle 5$ and $\angle 7$ are vertical angles
$m\angle 7 = 57^\circ$	
$m\angle 8 = 90 - m\angle 7$	$\angle 8$ and $\angle 7$ are complementary
$m\angle 8 = 90 - 57$	Substitution
$m\angle 8 = 33^\circ$	

**T**

Steps	Reasons
$m\angle 3 = 50^\circ$	Given
$m\angle 7 + m\angle 8 = 90$	$\angle 7$ and $\angle 8$ are complementary
$m\angle 3 + m\angle 9 + m\angle 7 + m\angle 8 = 180$	Sum of angles in $\Delta = 180$
$50 + m\angle 9 + 90 = 180$	Substitution
$m\angle 9 + 140 = 180$	Solve Equation
$m\angle 9 = 40^\circ$	

**S**

Steps	Reasons
$m\angle 12 = 120^\circ$	Given
$m\angle 9 = 180 - 120$	$\angle 9$ and $\angle 12$ Supplementary
$m\angle 9 = 60^\circ$	
$m\angle 8 + m\angle 7 = 90$	$\angle 7$ and $\angle 8$ Complementary
$m\angle 3 + m\angle 9 + m\angle 7 + m\angle 8 = 180$	Sum of angles in $\Delta = 180$
$m\angle 3 + 60 + 90 = 180$	
$m\angle 3 = 30$	

**H**

Steps	Reasons
$m\angle 7 = 55^\circ$ $m\angle 9 = 45^\circ$	Given
$m\angle 15 + m\angle 7 + m\angle 9 = 180$	Sum of angles in $\Delta = 180^\circ$
$m\angle 15 + 55 + 45 = 180$	Substitution
$m\angle 15 = 80$	Solve

**N**

Steps	Reasons
$m\angle 3 = 46^\circ$ $m\angle 4 = 99^\circ$	Given
$m\angle 8 + m\angle 3 + m\angle 4 = 180$	Sum of angles in $\Delta = 180$
$m\angle 8 + 46 + 99 = 180$	Substitution
$m\angle 8 = 180 - 145$	Solve
$m\angle 8 = 35$	

**W**

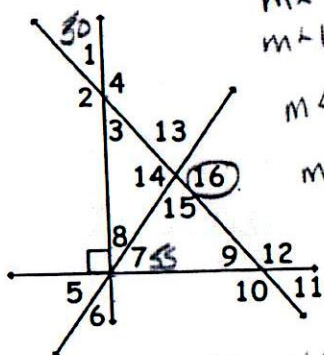
Steps	Reasons
$m\angle 9 = 29^\circ$ $m\angle 15 = 85^\circ$	Given
$m\angle 7 + m\angle 9 + m\angle 15 = 180$	Sum of angles in $\Delta = 180$
$m\angle 7 + 29 + 85 = 180$	Substitution
$m\angle 7 = 180 - 114$	Solve
$m\angle 7 = 66^\circ$	

**F**

Steps	Reasons
$m\angle 8 = 37^\circ$ $m\angle 3 = 38^\circ$	Given
$m\angle 3 + m\angle 8 + m\angle 4 = 180$	Sum of angles in $\Delta = 180$
$38 + 37 + m\angle 4 = 180$	Substitution
$m\angle 4 = 180 - 38 - 37$	Solve
$m\angle 4 = 105$	



D



$m\angle 7 = 55$   
 $m\angle 1 = 50$

$m\angle 3 = 50$

$m\angle 8 = 90 - m\angle 7$

$m\angle 8 = 90 - 55$

$m\angle 8 = 35$

$m\angle 3 + m\angle 8 + m\angle 14 = 180$

$50 + 35 + m\angle 14 = 180$

$m\angle 14 = 95$

$m\angle 16 = m\angle 14$

$m\angle 16 = 95^\circ$

Steps

Reasons

Given

$\angle 1$  and  $\angle 3$  vertical

$\angle 7$  and  $\angle 8$  complementary

substitute solve.

sum of angles in  $\Delta = 180$

substitution

solve equation

$\angle 14$  and  $\angle 16$  vertical

substitution.