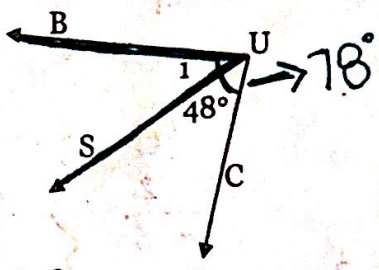
Homework 8/16 Name KEY

SHOW ALL YOUR WORK!!

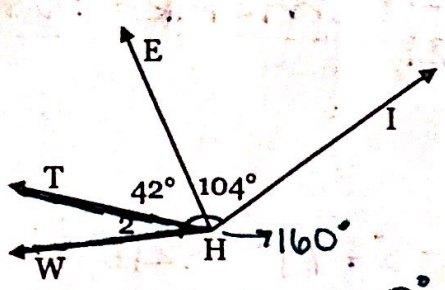
1. Find m∠1 if m∠CUB = 78.



78 − 48 = 30°

m∠1 = 30

2. Find m∠2 if m∠WHI = 160.



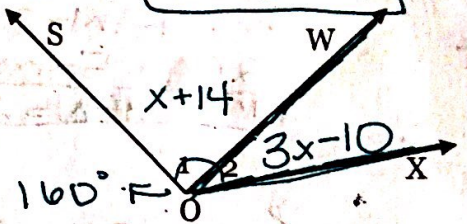
160 − 104 = 56

56 − 42 = 14

42° + 104° + ∠2 = 160°

m∠2 = 14°

3. m∠SOX = 160
m∠1 = x + 14
m∠2 = 3x − 10
Find m∠2



m∠2 = 3x − 10

3(39) − 10 = m∠2

m∠2 = 107°

2 39 − 3 = 117 − 10 = 107

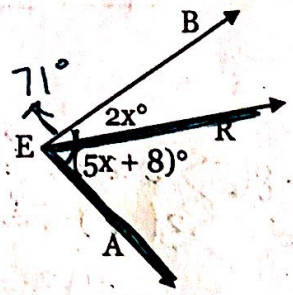
3x − 10 + x + 14 = 160°

4x + 4 = 160

4x = 156 x = 39

39 4)156 12 36

4. m∠BEA = 71. Find m∠REA.



m∠REA = 5x + 8

m∠REA = 5(9) + 8

m∠REA = 45 + 8

m∠REA = 53°

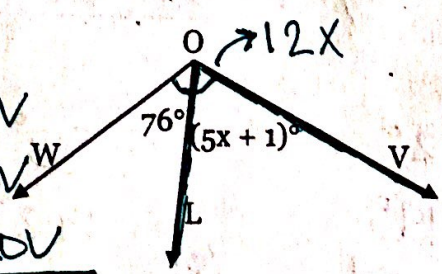
5x + 8 + 2x = 71

7x + 8 = 71

7x = 63

x = 9

5. m∠WOV = 12x. Find m∠LOV.



5x + 1 + 76 = 12x

76 = 12x − 5x − 1

76 = 7x − 1

77 = 7x

x = 11

5x + 1 = m∠LOV

5(11) + 1 = m∠LOV

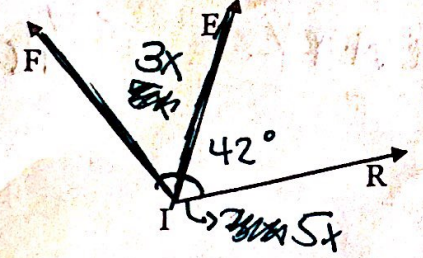
55 + 1 = m∠LOV

56 = m∠LOV

6. $m\angle FIE = 3x$, $m\angle RIE = 42°$, $m\angle FIR = 5x$
Find $m\angle FIR$.

$3x + 42° = 5x$
$42° = 2x$
$x = 21$

$m\angle FIR = 5x$
$5(21) = m\angle FIR$
$m\angle FIR = 105°$

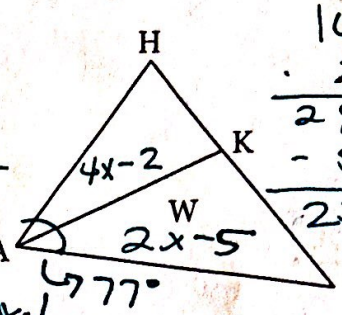


21 × 5 = 105

7. $m\angle HAK = 4x - 2$, $m\angle KAW = 2x - 5$,
and $m\angle HAW = 77$.
Find $m\angle HAK$ and $m\angle KAW$.

$4x - 2 + 2x - 5 = 77°$
$6x - 7 = 77°$
$6x = 84$
$x = 14$

$m\angle HAK = 4x - 2$
$4(14) - 2 = m\angle HAK$
$m\angle HAK = 54°$
$m\angle KAW = 2x - 5$
$2(14) - 5 = m\angle HAW$
$m\angle HAW = 23°$



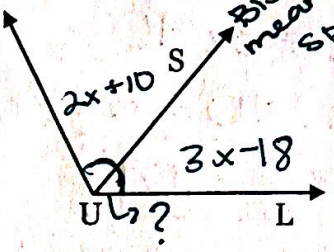
14 · 2 = 28; 28 − 5 = 23

14 × 4 = 56; 56 − 2 = 54

8. US bisects $\angle BUL$, $m\angle BUS = 2x + 10$,
and $m\angle SUL = 3x - 18$.
Find $m\angle BUL$.

$2x + 10 = 3x - 18$
$2x + 28 = 3x$
$28 = x$

$m\angle BUL = 2x + 10 + 3x - 18$
$m\angle BUL = 5x - 8$
$m\angle BUL = 5(28) - 8$
$m\angle BUL = 132°$



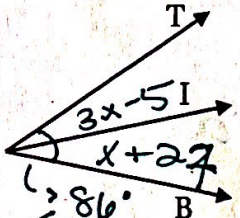
BISECTS means to split evenly

28 · 5 = 140; 140 − 8 = 132

9. $m\angle TRI = 3x - 5$, $m\angle IRB = x + 27$,
and $m\angle TRB = 86$.
Does $\overrightarrow{RI}$ bisect $\angle TRB$?

$3x - 5 + x + 27 = 86°$
$4x + 22 = 86°$
$4x = 64$
$x = 16$

$3x - 5 \stackrel{?}{=} x + 27$
$3(16) - 5 \stackrel{?}{=} 16 + 27$
$43 = 43$ ✓
yes, $\overrightarrow{RI}$ does bisect $\angle TRB$

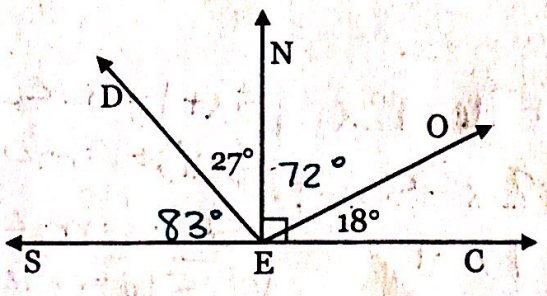


27 + 16 = 43

16 · 3 = 48; 48 − 5 = 43

10. Find the measure of each angle.

a. $m\angle NEO =$ 72°
b. $m\angle DES =$ 83°
c. $m\angle DEO =$ 99°
d. $m\angle SEO =$ 162°



180 − 90 = 90; 90 − 18 = 72

180 − 90 = 90; 90 − 7 = 83

27 + 72 = 99

180 − 18 = 162