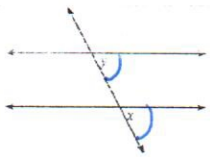
Secondary Math 2 **Unit 1 Review** **Name:** Key **Period:** ____

1. Name the angle four different ways.

∠IHG
∠GHI
∠H
∠2

2. identify the special angle pair shown. Tell whether they are congruent or supplementary.

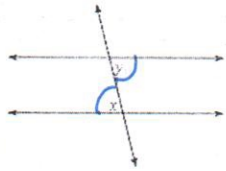
a)



corresponding angles

congruent

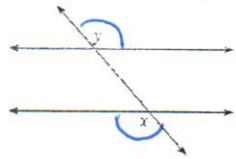
b)



alternate interior angles

congruent

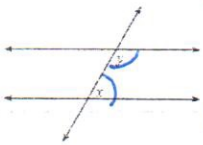
c)



alternate exterior angles

congrent

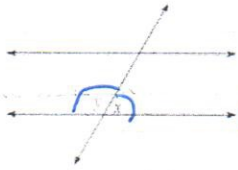
d)



same-side interior

supplementary

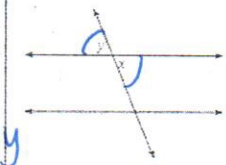
e)



Linear pair

Supplementary

f)

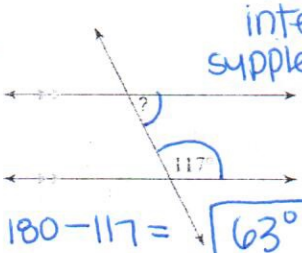


Vertical angles

congruent

3. Find the measure of each angle indicated. **Justify your answer.**

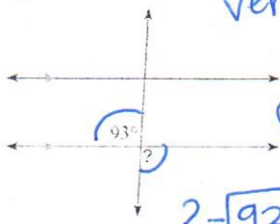
a)



same-side interior supplementary

180−117 = 63°

b)

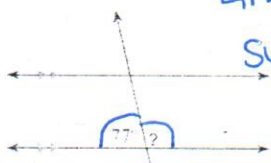


vertical angles

congruent

? = 93°

c)

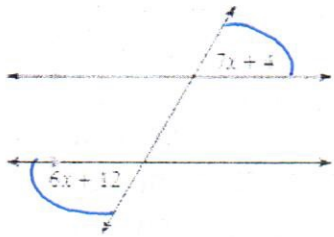


Linear pair supplementary

180−77 = 103°

4. Write an equation and solve for x. **Justify your answer.**

a)



Alt. ext. angles

congruent

$7x+4 = 6x+12$

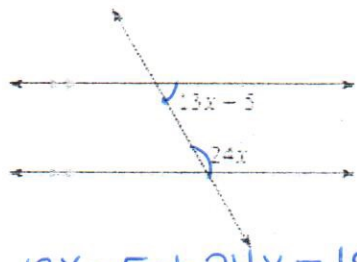
$-4 \quad -4$

$7x = 6x+8$

$-6x \quad -6x$

$x = 8$

b)



same-side interior supplementary

$13x-5+24x = 180$

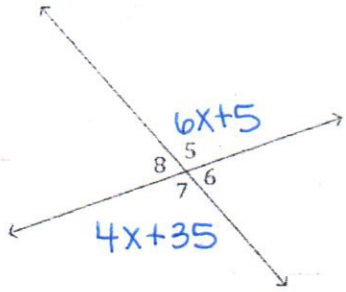
$37x-5 = 180$

$+5 \quad +5$

$\frac{37x}{37} = \frac{185}{37}$

$x = 5$

5. Given that lines m and n intersect as shown below and $m\angle 5 = 6x + 5$ and $m\angle 7 = 4x + 35$



a) Write an equation and solve for x. vertical angles are $\cong$

$6x+5 = 4x+35$
$-5 \quad -5$
$6x = 4x+30$
$-4x \quad -4x$
$2x = 30$

$\frac{2x}{2} = \frac{30}{2}$ → $x = 15$

b) What is $m\angle 8$?

$\angle 7$ and $\angle 8$ are linear pair

$4x+35 + m\angle 8 = 180°$

$4(15)+35+m\angle 8 = 180°$

$95 + m\angle 8 = 180°$
$-95 \quad -95$
$m\angle 8 = 85°$

6. Use the picture to answer the following questions. Assume lines that appear to be parallel are parallel.

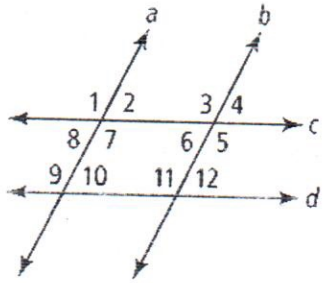
a) If $m\angle 6 = 50$, then find $m\angle 11$.
$m\angle 11 = 130°$ same-side interior

b) If $m\angle 2 = 70$, then find $m\angle 6$.
$m\angle 6 = 70°$ AIA

c) If $m\angle 1 = 130$, then find $m\angle 5$.
$m\angle 5 = 130°$ AEA

d) If $\angle 7 = 110$, then find $m\angle 10$.
$m\angle 10 = 70°$ same-side interior

e) If $m\angle 4 = 45$, then find $m\angle 12$.
$m\angle 12 = 45°$ corresponding angles



7. Write a two column proof for each of the following.

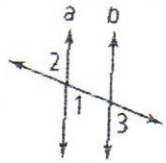
Given: $4(2x-3) = 36$

Prove: $x = 6$

Statement	Reason
① $4(2x-3) = 36$	① Given
② $8x - 12 = 36$ (+12 +12)	② Distribution Prop.
③ $\frac{8x}{8} = \frac{48}{8}$	③ Addition Prop.
④ $x = 6$	④ Division Prop.

Given: $a \parallel b$

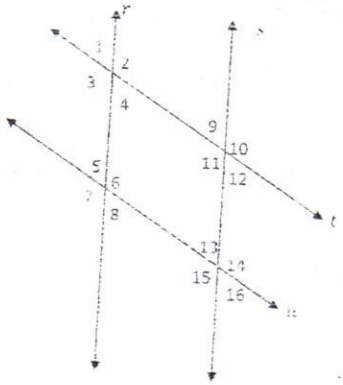
Prove: $\angle 2 \cong \angle 3$



Statement	Reason
① $a \parallel b$	① Given
② $\angle 1 \cong \angle 2$	② Vertical Angles
③ $\angle 1 \cong \angle 3$	③ corresponding angles
④ $\angle 2 \cong \angle 3$	④ substitution

Given: $r \parallel s$ and $t \parallel u$

Prove: $\angle 10$ and $\angle 8$ are supplementary.



Statement	Reason
① $r \parallel s$ and $t \parallel u$	① given
② $\angle 8 + \angle 2 = 180°$	② same-side exterior angles
③ $\angle 2 \cong \angle 10$	③ corresponding angles
④ $\angle 8 + \angle 10 = 180°$	④ substitution