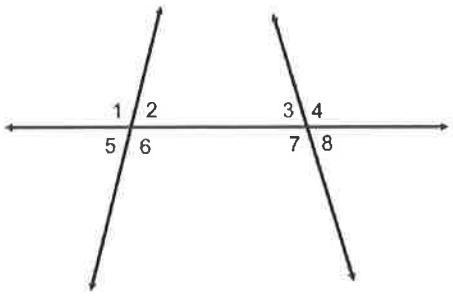
Name: Key Date: Hour:

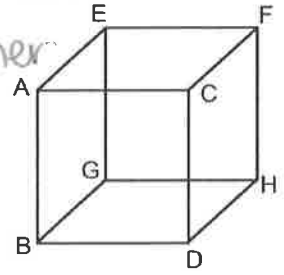
Adv. Geometry
WS PC #1 Review (3.1 – 3.4)

1. Using the diagram on the right, identify all pairs of angles of the given type.



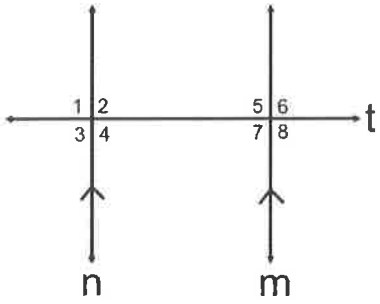
   a. Corresponding
      1,3 5,7
      2,4 6,8
   b. Alternate interior
      2,7
      3,6
   c. Alternate exterior
      1,8
      4,5
   d. Consecutive interior
      2,3
      6,7
   e. Vertical angles
      1,6 3,8
      2,5 4,7

2. Using the diagram on the right, provide an example of each segment relationship.



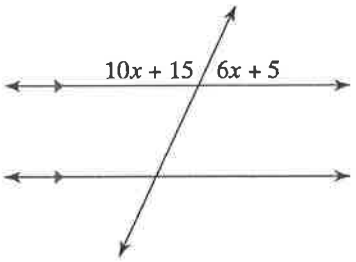
   a. Skew Segments
      $\overline{AE}$, $\overline{CD}$
      * there are other possibilities
   b. Parallel Segments
      $\overline{AE}$, $\overline{BG}$
   c. Perpendicular Segments
      $\overline{AE}$, $\overline{AB}$

3. Given the diagram below, determine the angle relationship and whether they are congruent or supplementary.



   a. ∠1, ∠4 vertical ≅
   b. ∠1, ∠5 corresponding ≅
   c. ∠2, ∠7 alt. interior ≅
   d. ∠3, ∠6 alt. exterior ≅
   e. ∠2, ∠5 cons. interior supp.
   f. ∠4, ∠8 corresponding ≅

4. Find the value of x, for each diagram.

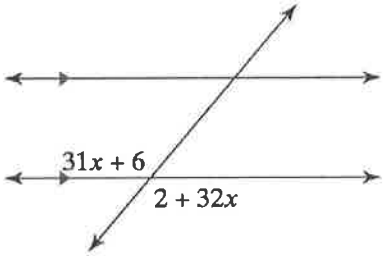


$10x+15+6x+5=180$

$16x+20=180$

$16x=160$

$x=10$



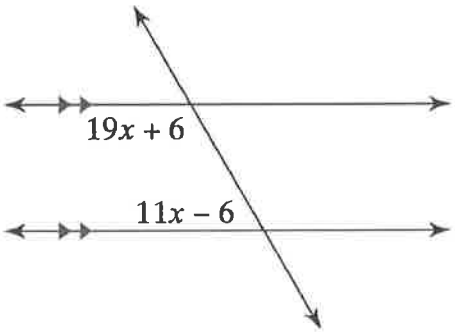
$31x+6=2+32x$

$-2 \quad -2$

$31x+4=32x$

$-31x \quad -31x$

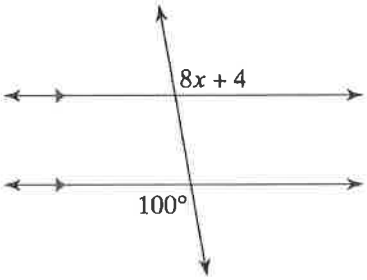
$4=x$



$19x+6+11x-6=180$

$30x=180$

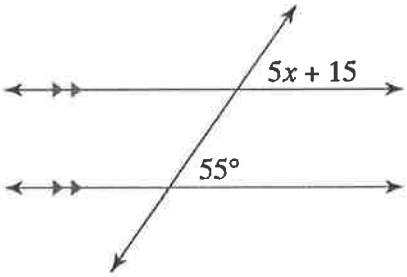
$x=6$



$8x+4=100$

$8x=96$

$x=12$

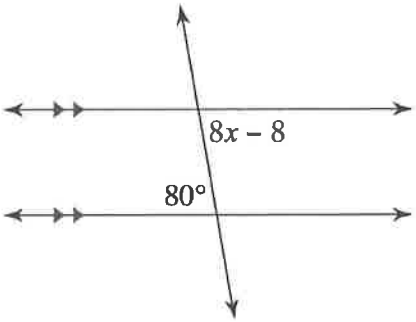


$5x+15=55$

$-15 \quad -15$

$5x=40$

$x=8$

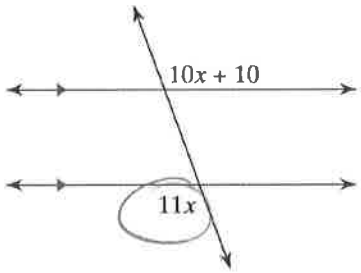


$8x-8=80$

$8x=88$

$x=11$

5. Find the measure of the angle indicated in **bold**.

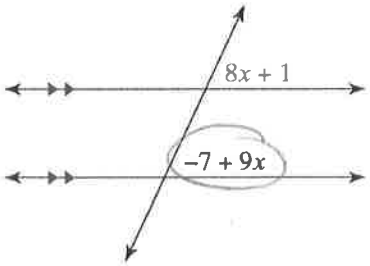


$10x + 10 = 11x$

$10 = 1x$

$11(1) = 11$

$11°$



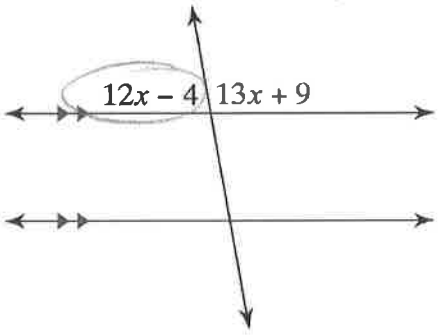
$8x + 1 = -7 + 9x$

$+7 \quad +7$

$8x + 8 = 9x$

$8 = x$

$-7 + 9(8) = 65°$



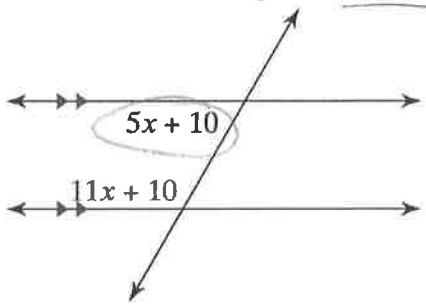
$12x - 4 + 13x + 9 = 180$

$25x + 5 = 180$

$25x = 175$

$x = 7$

$12(7) - 4 = 80°$



$5x + 10 + 11x + 10 = 180$

$16x + 20 = 180$

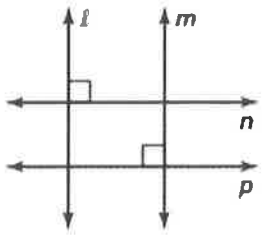
$16x = 160$

$x = 10$

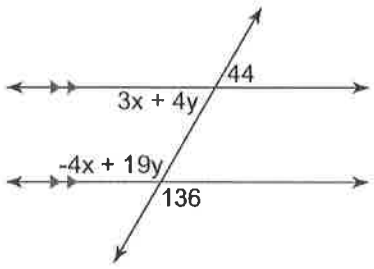
$5(10) + 10 = 60°$

6. Determine which lines, if any, must be parallel.

none



7. Solve for x and y for each diagram.



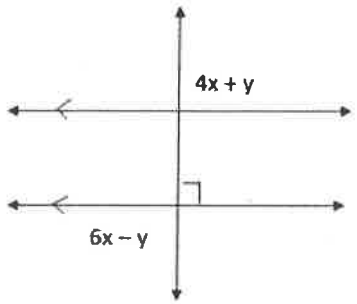
$4(3x+4y=44)$
$3(-4x+19y=136)$

$12x+16y=176$
$-12x+57y=408$

$73y=584$

$y=8$

$3x+4(8)=44$
$3x+32=44$
$3x=12$
$x=4$



$4x+y=90$
$6x-y=90$

$10x=180$

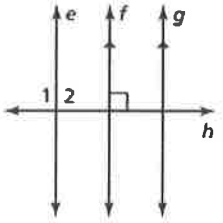
$x=18$

$6(18)-y=90$
$108-y=90$
$-y=-18$
$y=18$

8. Write a two-column proof for the following:

Given: $\angle 1 \cong \angle 2,\ f \perp h,\ and\ f \parallel g$

Prove: $e \parallel g$



1. $\angle 1 \cong \angle 2$	1. given
2. $f \perp h$ $f \parallel g$	2. given
3. $g \perp h$	3. $\perp$ trans. Thm
4. $e \perp h$	4. Un. Pair $\perp$ Thm
5. $e \parallel g$	5. $\perp$ to Trans Thm