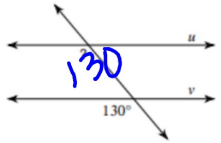
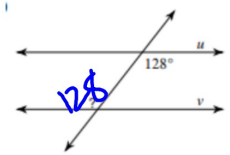
Part I: Give the name of the angle pair and their relationship (congruent or supplementary) in each diagram. Then find the value of the ? assuming that lines *u* and *v* are parallel.

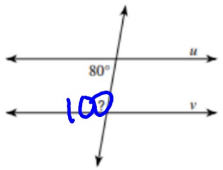
1. corresp ≅



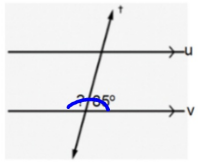
2. alt int ≅



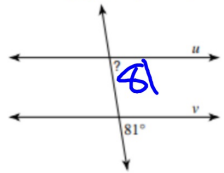
3. SSI Suppl



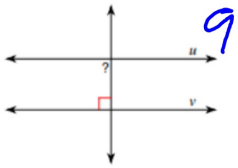
4. L. pair Suppl 95°



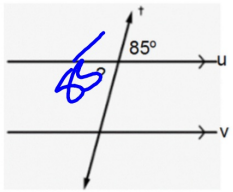
5. corresp ≅



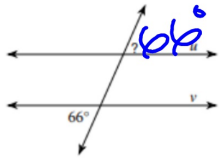
6. SSI Suppl 90°



7. vertical ≅

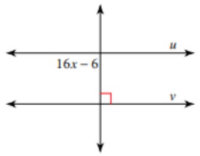


8. alt ext ≅



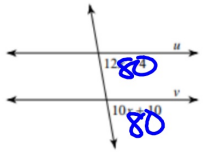
Part II: Find the value of x that makes lines *u* and *v* parallel.

9. The angles in the diagram are alt int angles and they are _____ (choose congruent or supplementary).



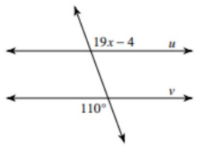
$16x - 6 = 90$
$16x = 96$
$x = 6$

10. The angles in the diagram are corresp angles and they are _____ (choose congruent or supplementary).



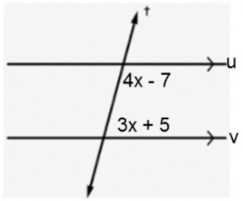
$12x - 4 = 10x + 10$
$12x = 10x + 14$
$2x = 14$
$x = 7$

11. The angles in the diagram are alt ext angles and they are _____ (choose congruent or supplementary).



$19x - 4 = 110$
$19x = 114$
$x = 6$

12. The angles in the diagram are SSI angles and they are SUPPL. (choose congruent or supplementary).



$4x - 7 + 3x + 5 = 180$
$7x - 2 = 180$
$7x = 182$
$x = 26$

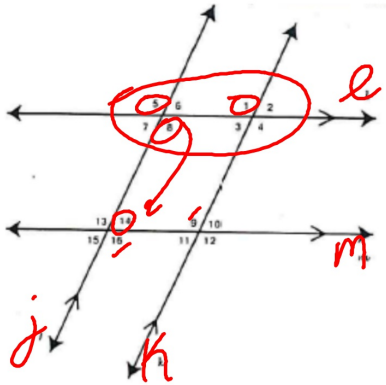
These prove lines are ||.
- SSI ∠s are suppl.
- SSE ∠s are suppl.
- corresp ∠s are ≅
- alt int/ext are ≅

These do not prove lines are ||
vert ∠s ≅
Linear pair suppl.

Hwk #23 Topic 6 Rev

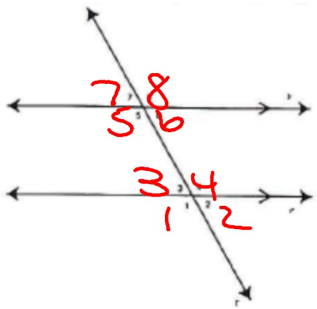
1. alternate interior
2. alternate exterior
3. SSI
4. corresponding
5. corresponding
6. alternate exterior
7. vertical
8. SSI
9. alternate interior
10. SSE
11. j || k
12. l || m
13. l || m
14. j || k
15. j || k
16. j || k
17. 120°; SSI
18. 72°; AI
19. 112°; corresponding
20. 122°; SSE
21. 120°; AE
22. 54°; vertical
23. 80°; AI
24. 65°; SSI

Use the diagram below for questions 1 – 24.



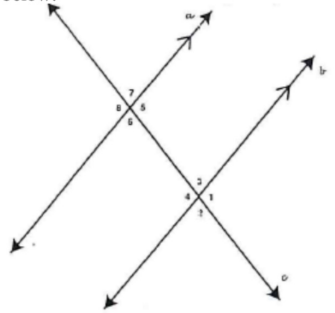
25. 1 & 5, 7 & 3, 2 & 6, 8 & 4
26. 4 & 5, 3 & 6
27. 3 & 5, 4 & 6
28. 1 & 8, 2 & 7
29. 1 & 7, 2 & 8

Identify all pairs of angles of the given type using the diagram below.



30. 6
31. 4
32. 6
33. 1
34. 7

Complete the statement using the diagram below.

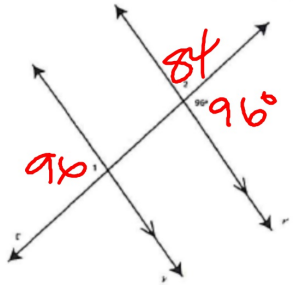


30. ∠2 and ____ are corresponding angles
31. ∠5 and ____ are alternate interior angles
32. ∠4 and ____ are same-side interior angles
33. ∠8 and ____ are alternate exterior angles
34. ∠1 and ____ are same-side exterior angles

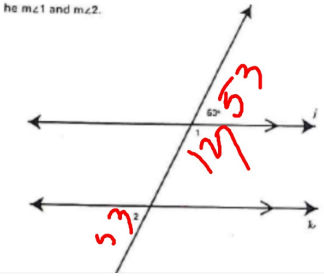
35. $1 = 96°; 2 = 84°$

36. $1 = 130°; 2 = 50°$

35. Find $m\angle 1$ and $m\angle 2$. Justify your answer.

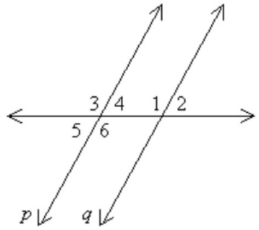


36. Find $m\angle 1$ and $m\angle 2$. Justify your answer.



37. $x = 40$

37. Find the value of x that makes p||q if $m\angle 1 = 3x$ and $m\angle 6 = 120°$

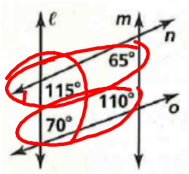


38. l || m because SSI angles are supplementary

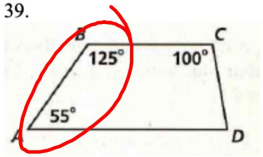
39. BC || AD because SSI angles are supplementary

Which lines or segments are parallel? Justify your answer.

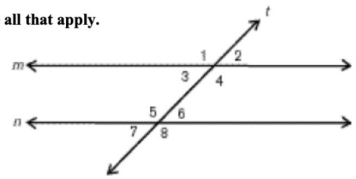
38.



39.



Directions: For #1-8, use the diagram to the right.



1. I can identify pairs of alternate interior angles. Circle all that apply.

A) 1 and 2 B) 3 and 6

C) 2 and 6 D) 4 and 6

E) 3 and 5 F) 4 and 5

2. I can identify pairs of same-side interior (consecutive) angles. Circle all that apply.

A) 1 and 2 B) 3 and 6 C) 3 and 5 D) 4 and 6 E) 7 and 3 F) 1 and 5

3. I can identify pairs of corresponding angles. Circle all that apply.

A) 1 and 2 B) 3 and 6 C) 2 and 6 D) 4 and 6 E) 7 and 3 F) 4 and 5

4. I can identify pairs of vertical angles. Circle all that apply.

A) 1 and 4 B) 3 and 6 C) 2 and 3 D) 4 and 6 E) 7 and 3 F) 1 and 5

5. I can identify pairs of congruent angles. Circle all that apply.

A) 1 and 4 B) 3 and 6 C) 2 and 3 D) 4 and 6 E) 7 and 3 F) 1 and 5

6. I can identify pairs of supplementary angles. Circle all that apply.

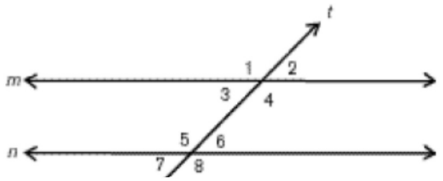
A) 1 and 4 B) 3 and 6 C) 2 and 3 D) 4 and 6 E) 7 and 3 F) 1 and 5

7. I can identify pairs of alternate exterior angles. Circle all that apply.

A) 1 and 4 B) 3 and 6 C) 1 and 8 D) 4 and 6 E) 7 and 2 F) 1 and 5

8. I can identify pairs of same-side (consecutive) exterior angles. Circle all that apply.

A) 1 and 7 B) 3 and 6 C) 2 and 8 D) 4 and 6 E) 7 and 3 F) 1 and 5

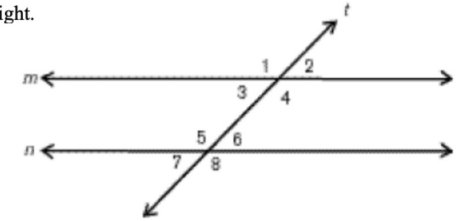


9. In the diagram above, $m \| n$.
In the first row determine whether each pair of angles is *supplementary or congruent*.
In the 2nd row, identify the angle pairs as one of the following: *Alternate-Interior, Alternate Exterior, Vertical, Linear Pair, Corresponding, or Consecutive Interior*.

Pair	1 and 2	3 and 6	2 and 6	4 and 6	7 and 6	1 and 8
Supplementary or Congruent	sup.	≅	≅	sup.	≅	≅
What type of angles are they?	Lpair	alt int	corr.	SSI	vert	ext

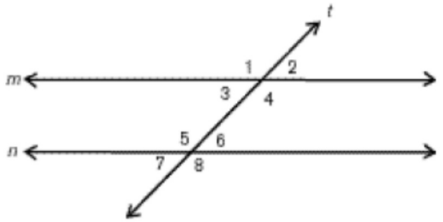
I can complete a two-column proof of parallel lines.

For #10 and #11 use the diagram to the right.



10. Given: $m \| n$ Prove: $\angle 6 \cong \angle 3$

Statements	Reasons
1) $m \| n$	1) Given
2) $\angle 2 \cong \angle 6$	2) corresp
3) $\angle 2 \cong \angle 3$	3) vert.
4) $\angle 6 \cong \angle 3$	4) trans. prop.



11. Given: $m \| n$ Prove: $m\angle 3 + m\angle 8 = 180°$

$a=b$ $b=c$ $a=c$

Statement	Reason
1) $m \| n$	1) Given
2) $m\angle 3 = m\angle 6$	2) alt int
3) $m\angle 6 + m\angle 8 = 180$	3) Definition of Linear Pair
4) $m\angle 3 + m\angle 8 = 180°$	4) subst.

1. In the parallelogram, what is the measure of $\angle A$?

57°

2. Write the slope-intercept form of the equation of the given line.
through: $(-3, 2)$, parallel to $y = -\frac{2}{3}x + 2$

$y = -2/3\,x$

$y = mx + b$
$m = -\frac{2}{3}$
$2 = -\frac{2}{3}(-3) + b$
$2 = +2 + b$
$b = 0$

3. Write the slope-intercept form of the equation of the given line.
through: $(1, -5)$, perp. to $y = \frac{1}{7}x + 2$

$y = -7x + 2$

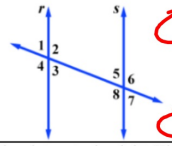
$m = -7$
$-5 = -7(1) + b$
$-5 = -7 + b$
$b = +2$

4. Write the slope-intercept form of the equation of the given line.
through: $(-2, -1)$, perp. to $y = 2x - 5$

$y = -1/2\,x - 2$

$m = -\frac{1}{2}$
$-1 = -\frac{1}{2}(-2) + b$

5.

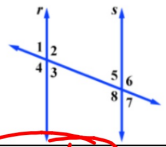


Which statement(s) are NOT valid if line s and r are parallel?

a) $\angle 5 + \angle 3 = 180°$
b) $\angle 6 \cong \angle 4$
c) $\angle 2 \cong \angle 8$
d) $\angle 5 + \angle 6 = 180°$
e) $\angle 3 \cong \angle 7$
f) $\angle 3 \cong \angle 8$

6. From the picture to the right, Kim thinks that line r might be parallel to line s.
What strategy could she use to test this conjecture?

a.) Measure angles $\angle 2$ and $\angle 4$ to see if they are $\cong$.
b.) Measure angles $\angle 2$ and $\angle 5$ to see if they are $\cong$.
c.) Measure angles $\angle 1$ and $\angle 7$ to see if they are $\cong$.
d.) Measure angles $\angle 2$ and $\angle 3$ to see if they are $\cong$.



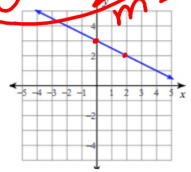
7. What is the equation of the line that is parallel to the given line and goes through the point (-2,1)?

$y = -\frac{1}{2}x$ $m = -\frac{1}{2}$

$1 = -\frac{1}{2}(-2) + b$

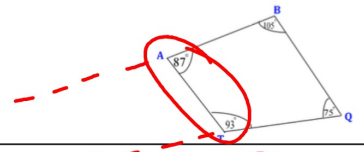
$1 = 1 + b$

$b = 0$



8. Based on the information in the picture, which statement below is a valid conclusion?

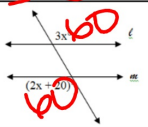
a) $\overline{AB}$ *is parallel to* $\overline{TQ}$
b) $\overline{AB}$ *is perpendicular to* $\overline{BQ}$
c) $\overline{AB}$ *is perpendicular to* $\overline{AT}$
d) $\overline{AT}$ *is parallel to* $\overline{BQ}$



9. Find the measure of the angles. $\ell \parallel m$

$2x + 20 = 3x$

$20 = x$



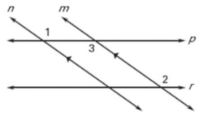
10. Find the meausre of each angle. $\ell \parallel m$

$4x - 9 + 75 = 180$

$x = 28.5$

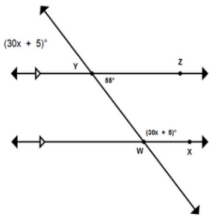
11. GIVEN: $n \parallel m$, $\angle 1 \cong \angle 2$
PROVE: $p \parallel r$

Statements	Reasons
$n \parallel m$	Given
$\angle 1 \cong \angle 3$	alt int
$\angle 1 \cong \angle 2$	Given
$\angle 2 \cong \angle 3$	TRANSt
$p \parallel r$	Alt int $\angle$s are $\cong$



12.

Given: $m\angle WYZ = 55°$; $m\angle YWX = (30x + 5)°$
Prove: $x = 4$



	Statements	Reasons
1)	$m\angle WYZ = 55$	Given
2)	$m\angle YWX = 30x + 5$	Given
3)	$m\angle WYZ + m\angle YWX = 180$	Def of SS
4)	$55 + 30x + 5 = 180$	Subst.
5)	$30x + 60 = 180$	simp.
6)	$30x = 180$	subt.
7)	$x = 4$	division