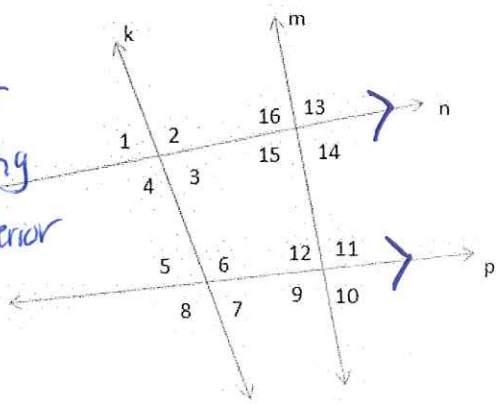
Chapter 3- Parallel and Perpendicular Lines

#1-11, Use the diagram at right where *n* // *p*. If the angles listed have a relationship, name it.

1. ∠1 and ∠5 Corresponding
2. ∠12 and ∠7 Alternate Interior
3. ∠14 and ∠16 Vertical
4. ∠9 and ∠13 Alternate Exterior
5. ∠12 and ∠3 none
6. ∠11 and ∠10 linear pair
7. ∠14 and ∠3 corresponding
8. ∠4 and ∠5 Same Side Interior



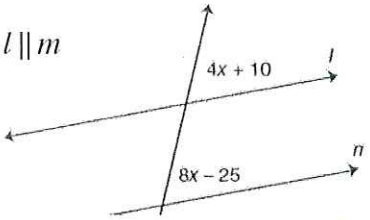
9. If $m\angle 13 = 76°$, then $m\angle 11 =$ 76°.

10. If $m\angle 4 = 76°$, then $m\angle 5 =$ 104°.

11. True or False? If $m\angle 12 = 76°$, then $m\angle 5 = 76°$ False, lines not //.

#12-13, solve for the variable.

12 $l \parallel m$

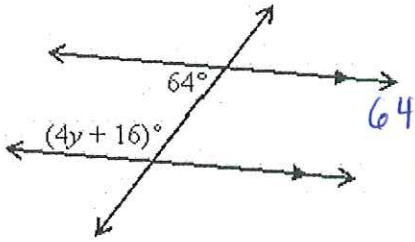


$4x + 10 = 8x - 25$

$35 = 4x$

$8.75 = x$

13.



$64 + 4y + 16 = 180$

$4y + 80 = 180$

$4y = 100$

$y = 25$

14. a. Find the slope of $\overleftrightarrow{HI}$ for points $H(11, 22)$ and $I(-1, -70)$. $\frac{-70-22}{-1-11} = \frac{-92}{-12} = \frac{23}{3}$

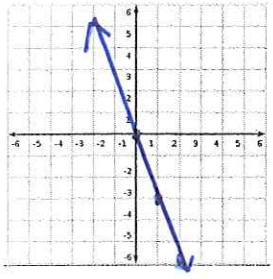
b. What is the slope of a line perpendicular (⊥) to $\overleftrightarrow{HI}$? $\frac{-3}{23}$ / -.13 and parallel (∥) to $\overleftrightarrow{HI}$? $\frac{23}{3}$ / 7.66

c Write the equation of line $\overleftrightarrow{HI}$ *in point-slope form.*

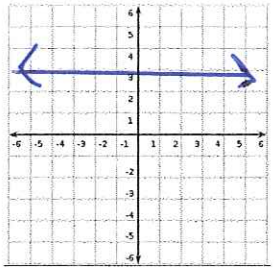
$y - 22 = \frac{23}{3}(x - 11)$ or $y + 70 = \frac{23}{3}(x + 1)$

15 Graph the lines below

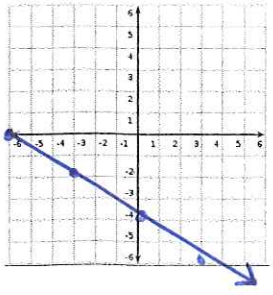
a. y = -3x



b. y = 3



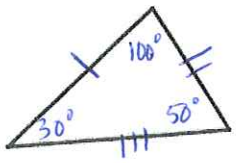
c. 2x + 3y = -12 $y = -\frac{2}{3}x - 4$



16. a. Find the slope of the line between the points (4, 27) and (4, 30) $\frac{3}{0}$ = undefined

b. Describe the orientation of this line on a graph. Vertical

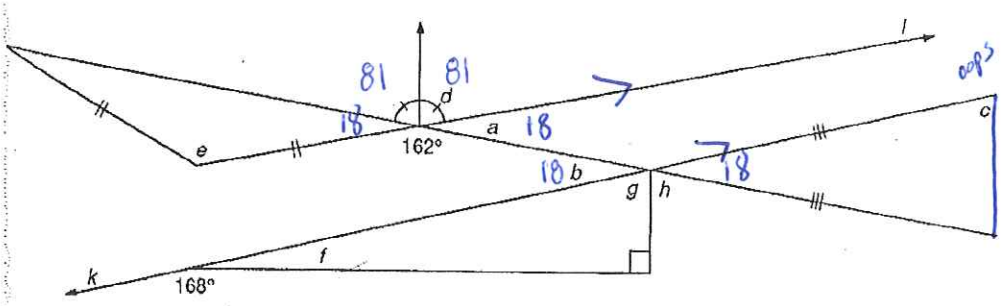
Chapter 4- Triangle Congruence



1. Mark the diagram to show the triangle is obtuse and scalene.

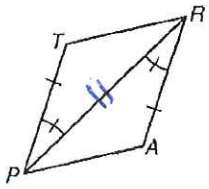
2. **Determine the value of the variables listed ($l \parallel k$).**

a = 18°
b = 18
c= 81°
d = 81°
e = 144°
f= 12°



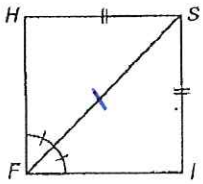
#3-8, Determine whether or not the triangles are congruent and give a reason for your answer.

3.



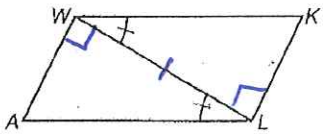
Yes, SAS

4.



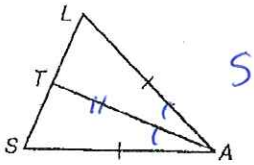
No, ASS

5. $AW \perp WL$ and $WL \perp KL$



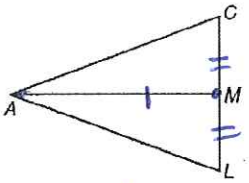
ASA, yes

6. $\overline{AT}$ is an angle bisector



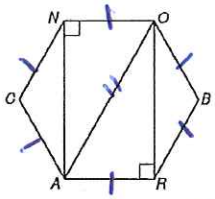
SAS, yes

7. $\overline{AM}$ is a median.



No, not enough

8. CARBON is a regular hexagon



yes, HL (right ASS)

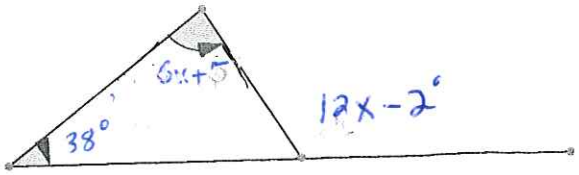
9. The triangles in #5 are congruent. Write the congruence statement (i.e. name them).

$\triangle WAL \cong \triangle LKW$

10. The triangles in #3 are congruent by SAS, but would PA = RT? Explain why or why not.

yes, CPCTC

11. Solve for x in diagram at right.



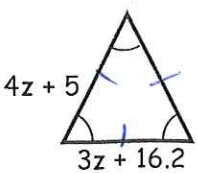
$38 + 6x + 5 = 12x - 2$

$6x + 43 = 12x - 2$

$45 = 6x$

$x = 7.5$

12. Solve for z in diagram at right.



equilateral

$4z + 5 = 3z + 16.2$

$z = 11.2$