

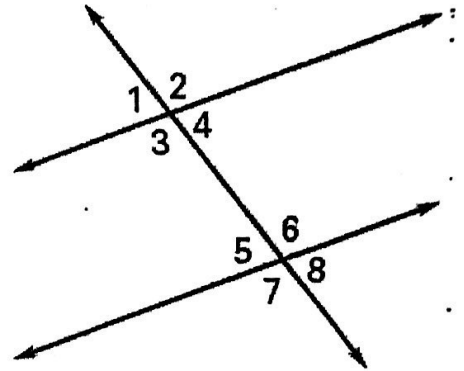
# Angles and Lines Review

Show all Work to receive full credit.

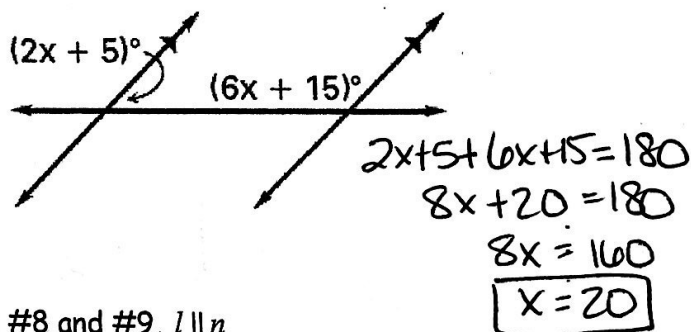
Name: Mrs. MacDonald  
Block: \_\_\_\_\_

In Exercises 1-5, identify the angle pair relationship created.

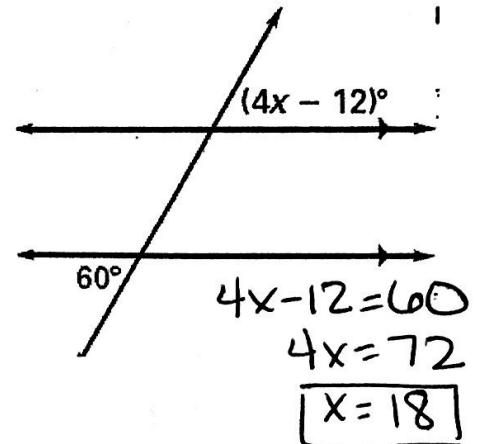
- $\angle 3$  and  $\angle 6$  are alternate interior angles.
- $\angle 4$  and  $\angle 6$  are consecutive interior angles.
- $\angle 2$  and  $\angle 7$  are alternate exterior angles.
- $\angle 1$  and  $\angle 5$  are corresponding angles.
- $\angle 1$  and  $\angle 8$  are alternate exterior angles.



6.

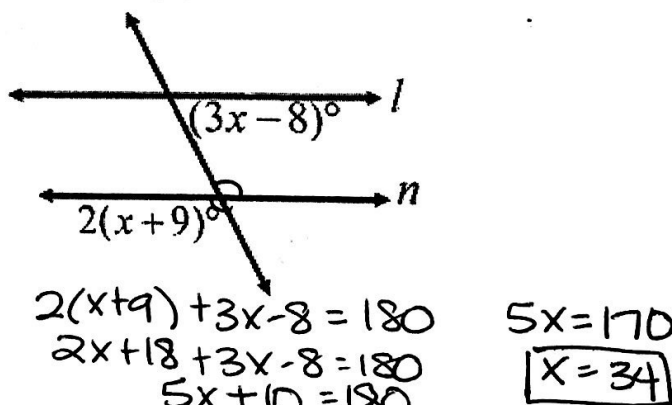


7.

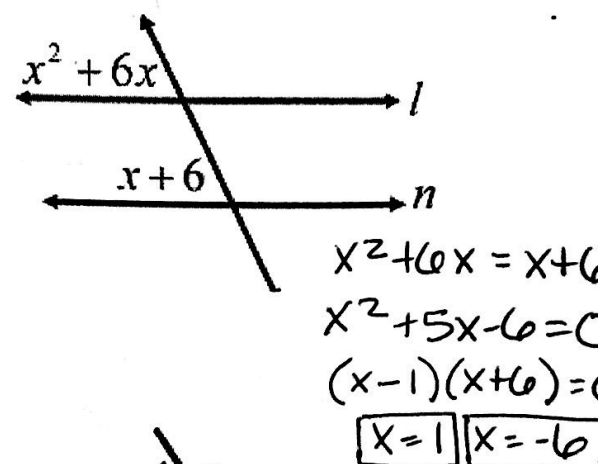


In #8 and #9,  $l \parallel n$

8.

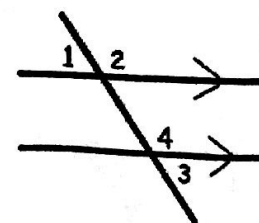


9.



10. Name the measure of each numbered angle if  $m\angle 1 = 52^\circ$ .

$$m\angle 2 = \underline{128^\circ} \quad m\angle 3 = \underline{52^\circ} \quad m\angle 4 = \underline{128^\circ}$$



11. Set up two equations with two unknowns and solve the system.

~~3x+5=y+2x~~

$$3x+5=y+2x$$

$$(x+5)=y$$

$$y+2x+4y-20=180$$

$$2x+5y=200$$

$$2x+5(x+5)=200$$

$$2x+5x+25=200$$

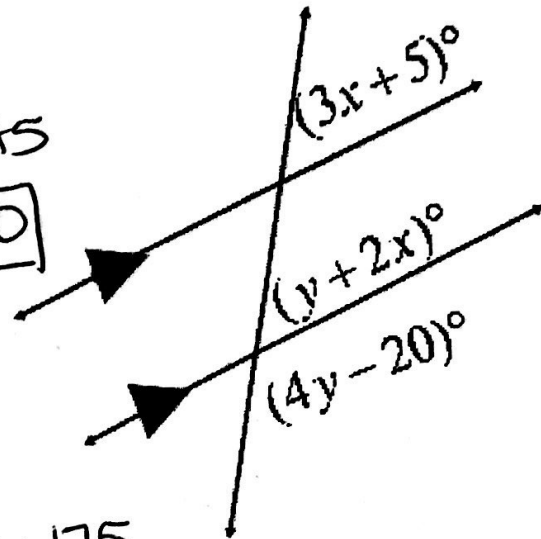
$$7x+25=200$$

$$y=25+5$$

$$y=30$$

$$7x=175$$

$$x=25$$



12. Use the given information to find the following angle measures.

GIVEN:  $l \parallel m$ ,  $m\angle 1 = 35^\circ$ , and  $m\angle 12 = 111^\circ$

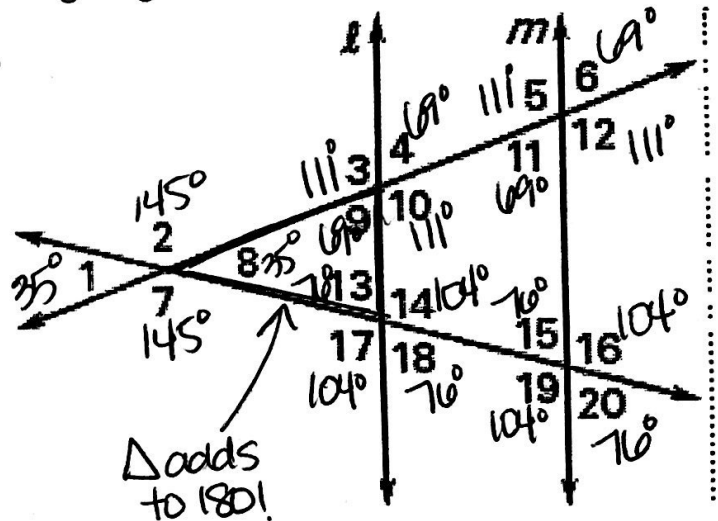
$$m\angle 2 = 145^\circ$$

$$m\angle 4 = 69^\circ$$

$$m\angle 13 = 76^\circ$$

$$m\angle 16 = 104^\circ$$

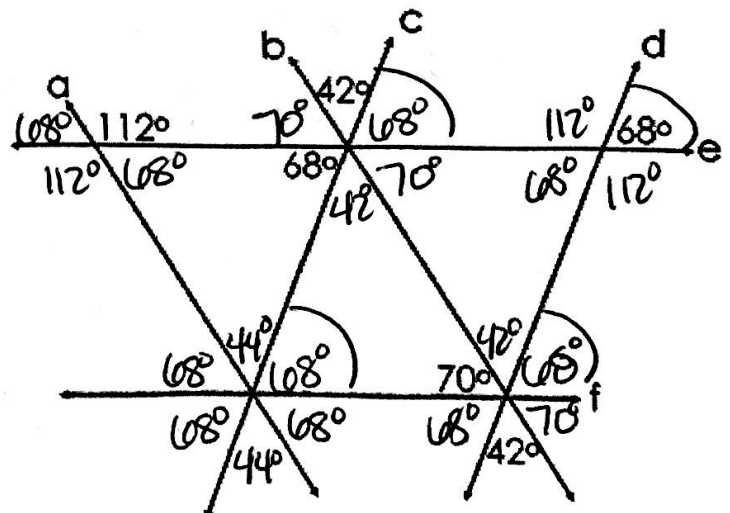
$$m\angle 17 = 104^\circ$$



13. Use the given information in the picture to find ALL of the missing angle measures. Then decide which lines are parallel. Please support each answer.

$c \parallel d$  corresponding angles converse

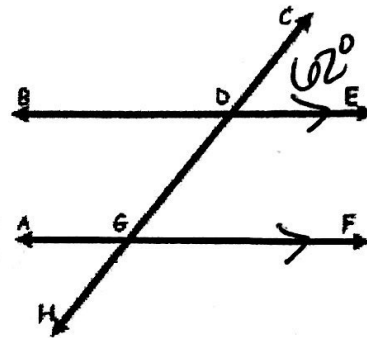
$e \parallel f$  corresponding angles converse



Fill in the missing reasons for each proof given below.

14. Given:  $\overline{AF} \parallel \overline{BE}$   
 $m\angle CDE = 62^\circ$

Prove:  $m\angle AGD = 118^\circ$



Statements

- 1.)  $\overline{AF} \parallel \overline{BE}$
- 2.)  $m\angle CDE = 62^\circ$
- 3.)  $\angle CDE \cong \angle DGF$
- 4.)  $m\angle CDE = m\angle DGF$
- 5.)  $62^\circ = m\angle DGF$
- 6.)  $m\angle AGD + m\angle DGF = 180^\circ$
- 7.)  $m\angle AGD + 62^\circ = 180^\circ$
- 8.)  $m\angle AGD = 118^\circ$

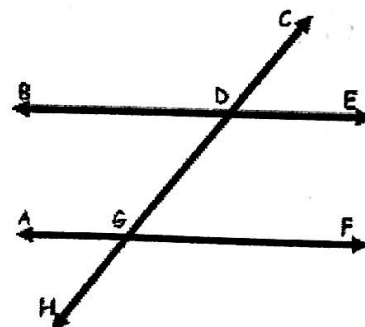
Reasons

- 1.) Given
- 2.) Given
- 3.) Corresponding Angles Postulate
- 4.) Definition of Congruent Angles
- 5.) Transitive Property of Equality
- 6.) Linear Pair Postulate
- 7.) Substitution
- 8.) Subtraction

Fill in the missing reasons for each proof given below.

15. Given:  $m\angle AGH = 75^\circ$   
 $m\angle BDC = 105^\circ$

Prove:  $\overline{AF} \parallel \overline{BE}$



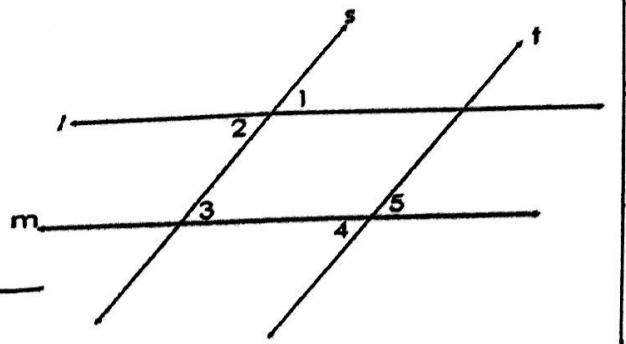
Statements

- 1.)  $m\angle AGH = 75^\circ$
- 2.)  $m\angle BDC = 105^\circ$
- 3.)  $m\angle AGH + m\angle AGD = 180^\circ$
- 4.)  $75^\circ + m\angle AGD = 180^\circ$
- 5.)  $m\angle AGD = 105^\circ$
- 6.)  $m\angle AGD = m\angle BDC$
- 7.)  $\angle AGD \cong \angle BDC$
- 8.)  $\overline{AF} \parallel \overline{BE}$

Reasons

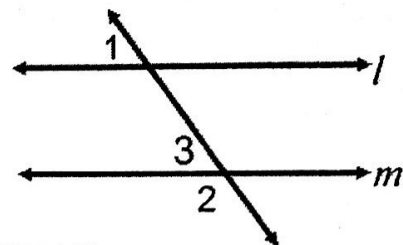
- 1.) Given
- 2.) Given
- 3.) Linear Pair Postulate
- 4.) Substitution
- 5.) Subtraction
- 6.) Transitive Property of Equality
- 7.) def. of  $\cong$
- 8.) Corresponding Angles Converse

16. Given  $l \parallel m, s \parallel t$   
 Prove:  $\angle 1 \cong \angle 5$



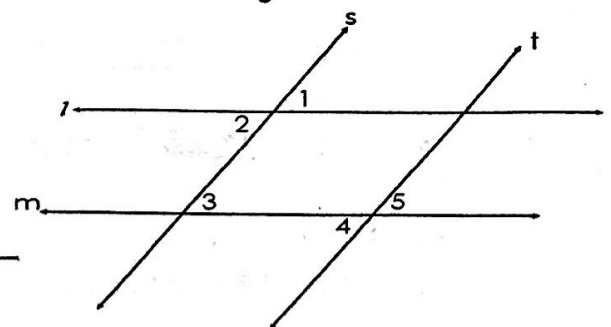
| Statements                | Reasons                        |
|---------------------------|--------------------------------|
| $l \parallel m$           | Given                          |
| $s \parallel t$           | Given                          |
| $\angle 1 \cong \angle 3$ | Corresponding Angles Postulate |
| $\angle 3 \cong \angle 5$ | Corresponding Angles Postulate |
| $\angle 1 \cong \angle 5$ | Transitive                     |

17. Given:  $l \parallel m$   
 Prove:  $\angle 1$  and  $\angle 2$  are supplementary



| Statements                      | Reasons                        |
|---------------------------------|--------------------------------|
| $l \parallel m$                 | Given                          |
| $\angle 1 \cong \angle 3$       | Corresponding Angles Postulate |
| $m\angle 1 = m\angle 3$         | def. of $\cong$                |
| $m\angle 2 + m\angle 3 = 180$   | Linear Pair Postulate          |
| $m\angle 2 + m\angle 1 = 180$   | Substitution                   |
| $\angle 1 + \angle 2$ are supp. | def. of supplementary          |

18. Given  $l \parallel m, \angle 1 \cong \angle 4$   
 Prove:  $s \parallel t$



| Statements                | Reasons                            |
|---------------------------|------------------------------------|
| $l \parallel m$           | Given                              |
| $\angle 1 \cong \angle 4$ | Given                              |
| $\angle 1 \cong \angle 3$ | Corresponding Angles Postulate     |
| $\angle 3 \cong \angle 4$ | Transitive                         |
| $s \parallel t$           | Alternate Interior Angles Converse |