

# Warm-up

Describe the pattern in the numbers. Write the next number in the pattern. (p. 72)

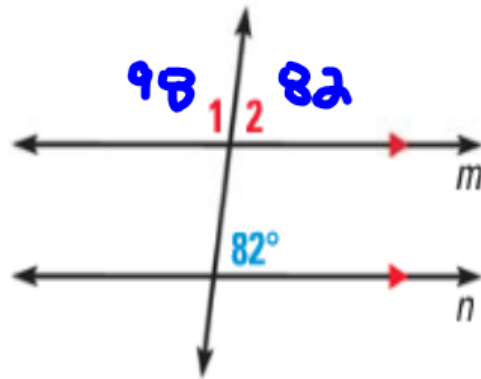
70.  $-2, -7, -12, -17, \dots$   
 $-5$

71.  $4, 8, 16, 32, \dots$   
 $\times 2$

72.  $101, 98, 95, 92, \dots$   
 $-3$

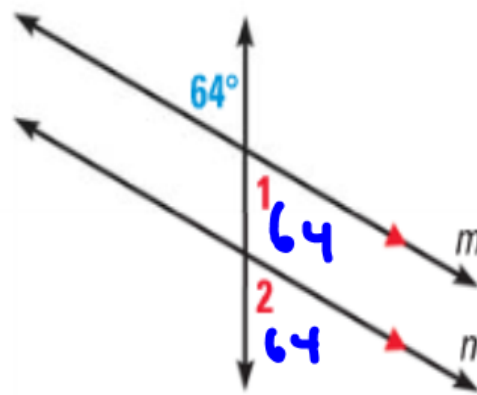
Find  $m\angle 1$  and  $m\angle 2$ . Explain your reasoning. (p. 154)

73.



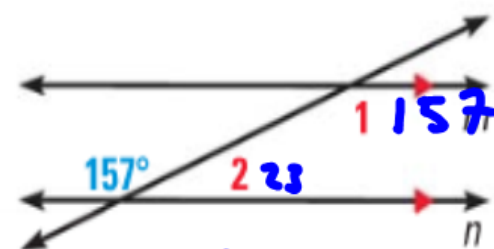
$82^\circ \angle 2$  are correspond  
 $1 \angle 2$  are linear pair

74.



$64^\circ \angle 1$  are vertical  
 $1 \angle 2$  are correspond

75.

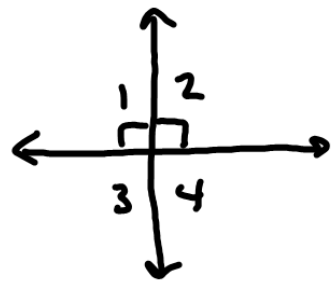


$157^\circ \angle 1$  are alt int c's

$1 \angle 2$  are consec int c's

## 3.6 Perpendicular Lines

If 2 lines intersect to form a congruent linear pair, then the lines are perpendicular.



$$\angle 1 \cong \angle 2$$

$$\angle 1 + \angle 2 = 180, \text{ so } \angle 1 = 90^\circ, \angle 2 = 90^\circ$$

$$\text{(also } \angle 3 \cong \angle 4 = 90^\circ)$$

If 2 lines intersect to form  $\perp$  lines, then there are 4 right angles. (Duh)

### Example

List the 4 sets of linear pairs

1)  $\angle 1 \cong \angle 2$

2)

3)

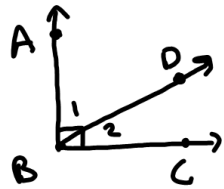
4)

Write a congruence statement about those angles.

$$\angle 1 \cong \angle 2, \angle 3 \cong \angle 4 \quad \text{or} \quad \angle 1 \cong \angle 2 \cong \angle 3 \cong \angle 4$$

(all =  $90^\circ$ )

If 2 sides of 2 adjacent acute angles are  $\perp$ , then the angles are Complementary.  
 (next to) ( $< 90^\circ$ )  
 (add up to  $90^\circ$ )



$$\angle 1 + \angle 2 = 90^\circ$$

Example

Make 2 statements about  $\angle 1$  &  $\angle 2$

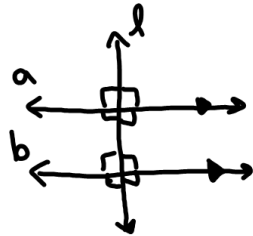
- 1) They are Complementary
- 2) They are adjacent

If  $m\angle 1 = 32^\circ$ , find  $m\angle 2$

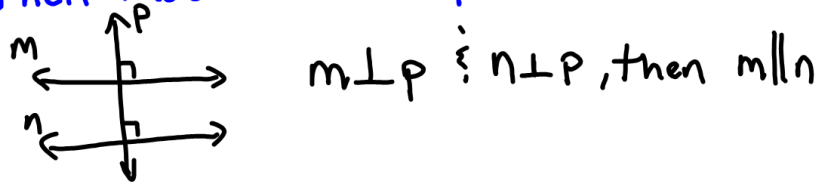
$$90 - 32 = 58$$

$$m\angle 2 = 58^\circ$$

If a transversal is  $\perp$  to one of two parallel lines, then it is  $\perp$  to the other one.



If 2 lines are  $\perp$  to the same transversal, then those lines are parallel



$$m \perp p \text{ ; } n \perp p, \text{ then } m \parallel n$$