

**Geometry A**  
**Unit 3 Additional Practice**

Name \_\_\_\_\_  
 Hour \_\_\_\_\_ Date \_\_\_\_\_

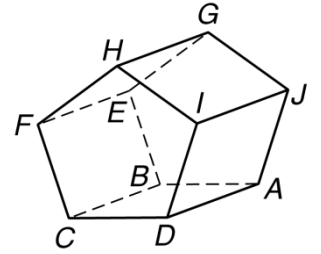
For #1 and 2, refer to the figure at the right.

1. Which segment is parallel to  $\overline{IJ}$ ?

- A.  $\overline{GH}$                       B.  $\overline{AJ}$                       C.  $\overline{HI}$                       D.  $\overline{AB}$

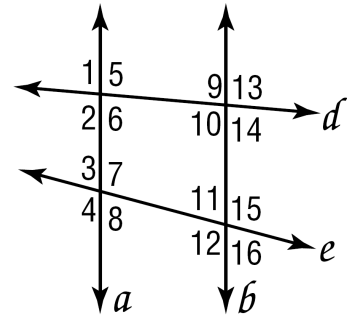
2. Which plane is parallel to plane  $CDF$ ?

- A. plane  $BEF$                       B. plane  $HIJ$                       C. plane  $ABE$                       D. plane  $ABC$



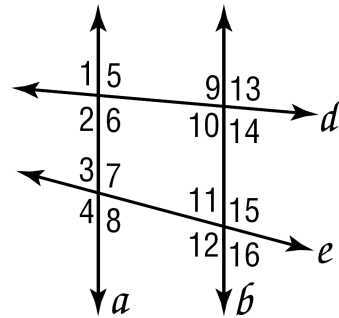
For #8-16, refer to the figure below. Identify each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, or *consecutive interior* angles.

- |                                |                                 |
|--------------------------------|---------------------------------|
| 3. $\angle 2$ and $\angle 7$   | 4. $\angle 5$ and $\angle 13$   |
| 5. $\angle 7$ and $\angle 11$  | 6. $\angle 6$ and $\angle 9$    |
| 7. $\angle 4$ and $\angle 15$  | 8. $\angle 2$ and $\angle 3$    |
| 9. $\angle 10$ and $\angle 12$ | 10. $\angle 11$ and $\angle 14$ |



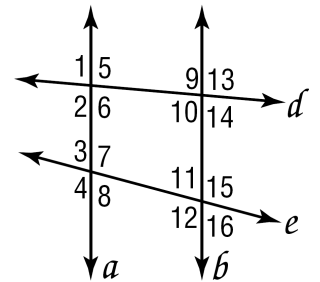
For #11 and 12, refer to the figure at the right.

11. Given  $a \parallel b$  and  $m\angle 6 = 89^\circ$ , find  $m\angle 14$ .  
 12. Given  $a \parallel b$  and  $m\angle 7 = 104^\circ$ , find  $m\angle 11$ .



13. Suppose  $a \parallel b$ ,  $m\angle 8 = 4x + 10$ ,  $m\angle 12 = 7x - 17$ , and  $m\angle 11 = 3y$ .

- a. Find the value of  $x$ .                      b. Find the value of  $y$ .



For #14-16, for the given information,

a. Determine which lines are parallel or choose “not enough information”

b. Justify your answer.

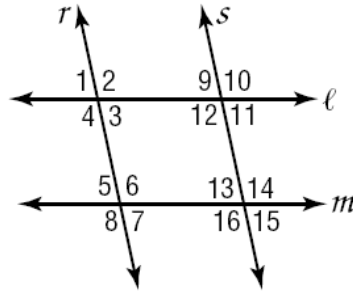
14.  $\angle 10 \cong \angle 16$

a.  $r \parallel s$

$\ell \parallel m$

not enough information

b. Justification:



15.  $m\angle 2 + m\angle 9 = 180$

a.  $r \parallel s$

$\ell \parallel m$

not enough information

b. Justification:

16.  $\angle 1 \cong \angle 15$

a.  $r \parallel s$

$\ell \parallel m$

not enough information

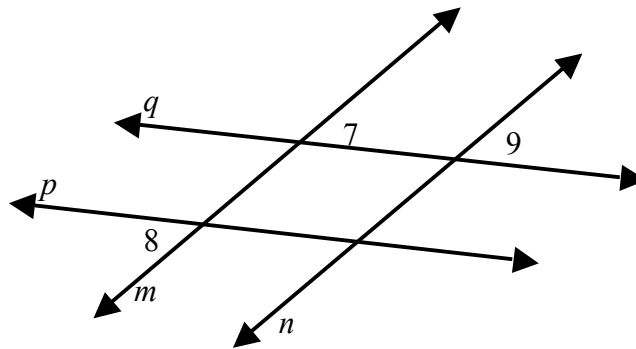
b. Justification:

17. Complete the following proof.

**Given:**  $p \parallel q$

$\angle 8 \cong \angle 9$

**Prove:**  $m \parallel n$



Statements	Reasons
1. $p \parallel q$	1.
2. $\angle 8 \cong \angle 9$	2.
3. $\angle 8 \cong \angle 7$	3.
4. $\angle 7 \cong \angle 9$	4.
5. $m \parallel n$	5.

18. If  $\overline{AB}$  has a slope =  $\frac{20}{6}$ ,  $\overline{CD}$  has a slope =  $-\frac{10}{3}$ ,  $\overline{EF}$  has a slope =  $\frac{15}{50}$ , and  $\overline{GH}$  has a slope =  $\frac{3}{10}$ .

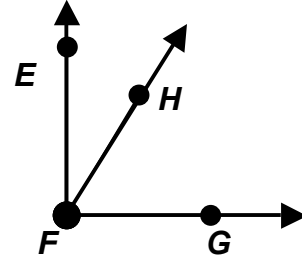
a. Identify two lines that are parallel.

b. Identify two lines that are perpendicular.

## Unit 1&2 FLASHBACK

19. Suppose  $\overrightarrow{FE} \perp \overrightarrow{FG}$ ,  $m\angle EFH = (2x - 10)^\circ$ , and  $m\angle HFG = (3x + 25)^\circ$ .

Find  $x$ , and  $m\angle EFH$



20. Suppose  $\angle 1$  and  $\angle 2$  form a linear pair. If  $m\angle 1 = (5x + 20)^\circ$ , and  $m\angle 2 = (3x + 56)^\circ$ , find  $x$ .
21. Suppose  $C$  is between  $A$  and  $B$ . If  $AB = 26.5$  and  $BC = 12.3$ , find  $AC$ .
22. Find the midpoint of  $\overline{CD}$  with endpoints  $C(-3, 7)$  and  $D(1, 2)$ . In what quadrant is the midpoint?

**Write the property, definition or theorem that justifies each statement.**

23. If  $m\angle 1 = m\angle 2$ , then  $m\angle 2 = m\angle 1$ .
24. If  $AB = CD$ , then  $3AB = 3CD$ .
25. If  $m\angle 1 + m\angle 2 = 110^\circ$  and  $m\angle 2 = m\angle 3$ , then  $m\angle 1 + m\angle 3 = 110^\circ$ .
26. If  $B$  is in the interior of  $\angle ACD$ , then  $m\angle ACB + m\angle BCD = m\angle ACD$ .
27. If  $E$  is the midpoint of  $\overline{XY}$ , then  $\overline{XE} \cong \overline{EY}$ .
28.  $6(x - 7) = 6x - 42$
29. If  $B$  is between  $C$  and  $D$ , then  $CB + BD = CD$ .