

Geometry A
Unit 3 Additional Practice

Name Key
Hour _____ Date _____

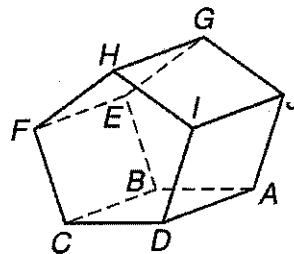
For #1 and 2, refer to the figure at the right.

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

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

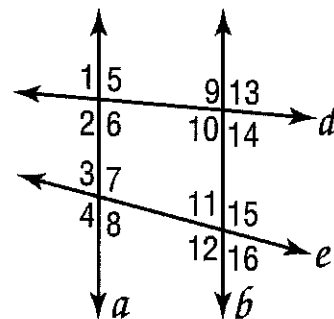
2. Which plane is parallel to plane CDF ?

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



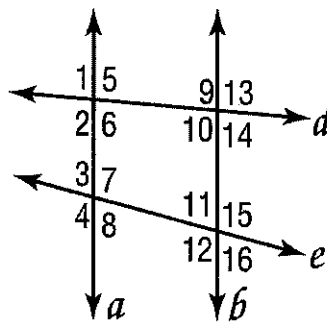
For #8-16, refer to the figure below. Identify each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, or *consecutive interior* angles.

3. $\angle 2$ and $\angle 7$ AIA
 4. $\angle 5$ and $\angle 13$ CA
 5. $\angle 7$ and $\angle 11$ CIA
 6. $\angle 6$ and $\angle 9$ AIA
 7. $\angle 4$ and $\angle 15$ AEA
 8. $\angle 2$ and $\angle 3$ CIA
 9. $\angle 10$ and $\angle 12$ CA
 10. $\angle 11$ and $\angle 14$ AIA



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

11. Given $a \parallel b$ and $m\angle 6 = 89^\circ$, find $m\angle 14$. 89°
 12. Given $a \parallel b$ and $m\angle 7 = 104^\circ$, find $m\angle 11$. 76°



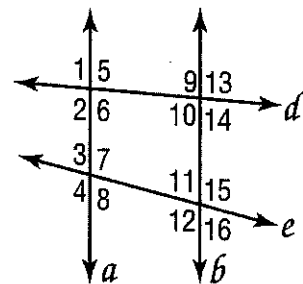
13. Suppose $a \parallel b$, $m\angle 8 = 4x + 10$, $m\angle 12 = 7x - 17$, and $m\angle 11 = 3y$.

a. Find the value of x .

$$x = 17$$

b. Find the value of y .

$$y = 26$$



For #14-16, for the given information,

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

b. Justify your answer.

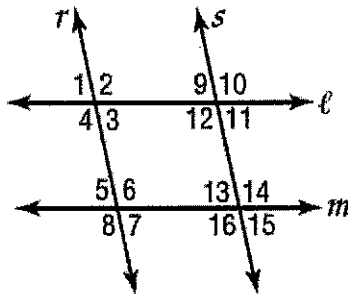
14. $\angle 10 \cong \angle 16$

a. $r \parallel s$

$\ell \parallel m$

not enough information

b. Justification: $AEA \cong \leftrightarrow \parallel \text{ lines}$



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

a. $r \parallel s$

$\ell \parallel m$

not enough information

b. Justification:

$CIA \text{ supp} \leftrightarrow \parallel \text{ lines}$

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

a. $r \parallel s$

$\ell \parallel m$

not enough information

b. Justification:

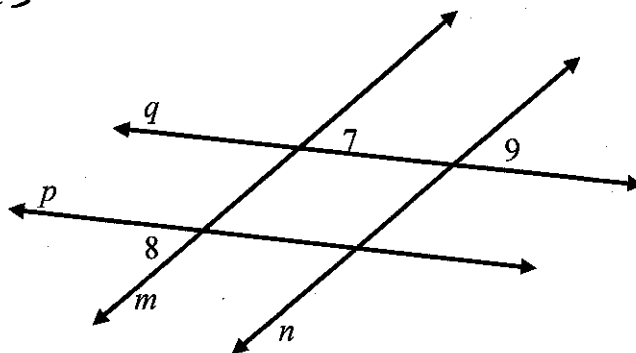
no common transversal

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. Given
2. $\angle 8 \cong \angle 9$	2. Given
3. $\angle 8 \cong \angle 7$	3. $\parallel \text{ lines} \leftrightarrow AEA \cong$
4. $\angle 7 \cong \angle 9$	4. Transitive
5. $m \parallel n$	5. $CA \cong \leftrightarrow \parallel \text{ lines}$

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. \overline{EF} and \overline{GH}

b. Identify two lines that are perpendicular. \overline{CD} and \overline{EF}

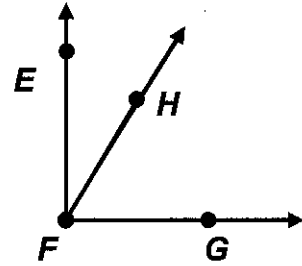
or \overline{CD} and \overline{GH}

UNIT 1&2 FLASHBACK

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

Find x , and $m\angle EFH$

$$x = 15, \quad m\angle EFH = 20^\circ$$



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 .

$$x = 13$$

21. Suppose C is between A and B . If $AB = 26.5$ and $BC = 12.3$, find AC .

$$AC = 14.2$$

22. Find the midpoint of \overline{CD} with endpoints $C(-3, 7)$ and $D(1, 2)$. In what quadrant is the midpoint?

$$(-1, 4.5) \quad \text{Quadrant II}$$

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

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