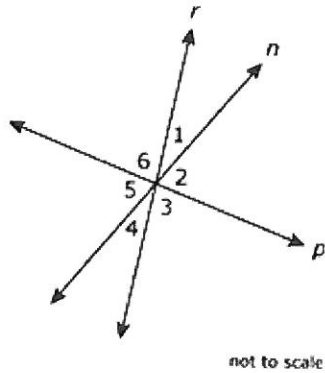# Unit 2 Review

1. The figure shows lines r, n, and p intersecting to form angles numbered 1, 2, 3, 4, 5, and 6. All three lines lie in the same plane.

not to scale

Based on the figure, which of the individual statements would provide enough information to conclude that line r is perpendicular to line p?

Select **all** that apply.

☐ A. $m\angle 2 = 90°$

☐ B. $m\angle 6 = 90°$

☐ C. $m\angle 3 = m\angle 6$

☐ D. $m\angle 1 + m\angle 6 = 90°$

☐ E. $m\angle 3 + m\angle 4 = 90°$

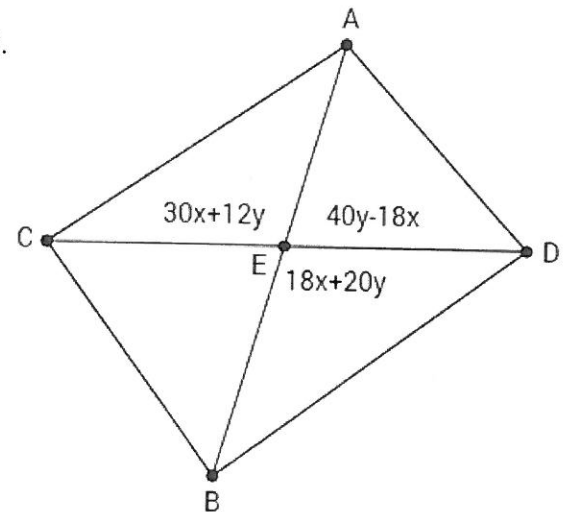☐ F. $m\angle 4 + m\angle 5 = 90°$

2. Find the length and midpoint of each segment given the endpoints.

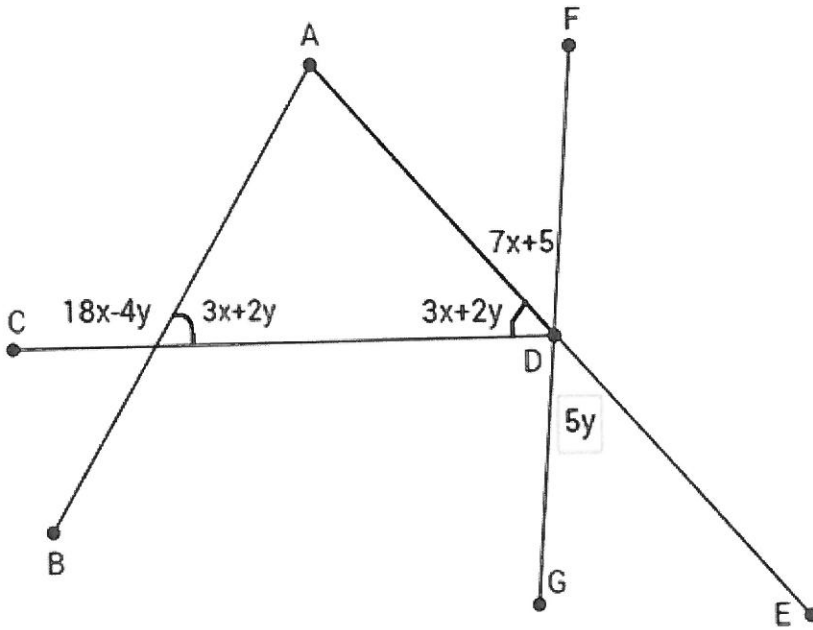A(-6,1) B(0,5)   C(-5, 1) D(-3, 8)   E(2,7) F(4, -2)

3. Find x and y (use the vertical angles theorem and linear pair postulate).

4. Find x and y.

5. Write the converse and inverse of each statement. Then say if each statement is true or false. If false, provide a counter example.
If angles are vertical angles, then they are congruent.

If an angle is a right angle, then it is 90 degrees.

6. Solve for x by writing algebraic proofs.

$5(4x-11) = 8x-7$ $\qquad\qquad$ $4(6x - 2) + 8 = 4x+3$
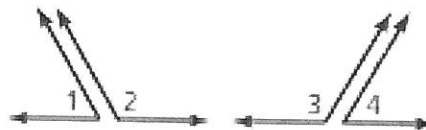
7. Solve each system by any method.

$y = -3x + 9$ $\qquad\qquad$ $12x + 3y = 18$
$y = 5x + 33$ $\qquad\qquad\;\,$ $4x - 5y = -102$

8. **Given** $\angle1$ and $\angle2$ are supplementary.
$\qquad\qquad\;$ $\angle3$ and $\angle4$ are supplementary.
$\qquad\qquad\;$ $\angle1 \cong \angle4$

Prove $\angle2 \cong \angle3$

| STATEMENTS	REASONS
1. $\angle1$ and $\angle2$ are supplementary. $\angle3$ and $\angle4$ are supplementary. $\angle1 \cong \angle4$	1. Given
2. $m\angle1 + m\angle2 = 180°$, $m\angle3 + m\angle4 = 180°$	2. _____
3. _____ $= m\angle3 + m\angle4$	3. Transitive Property of Equality
4. $m\angle1 = m\angle4$	4. Definition of congruent angles
5. $m\angle1 + m\angle2 =$ _____	5. Substitution Property of Equality
6. $m\angle2 = m\angle3$	6. _____
7. _____	7. _____

9. Determine if the statement is true or false.

$\overleftrightarrow{GE} \perp$ plane M _____
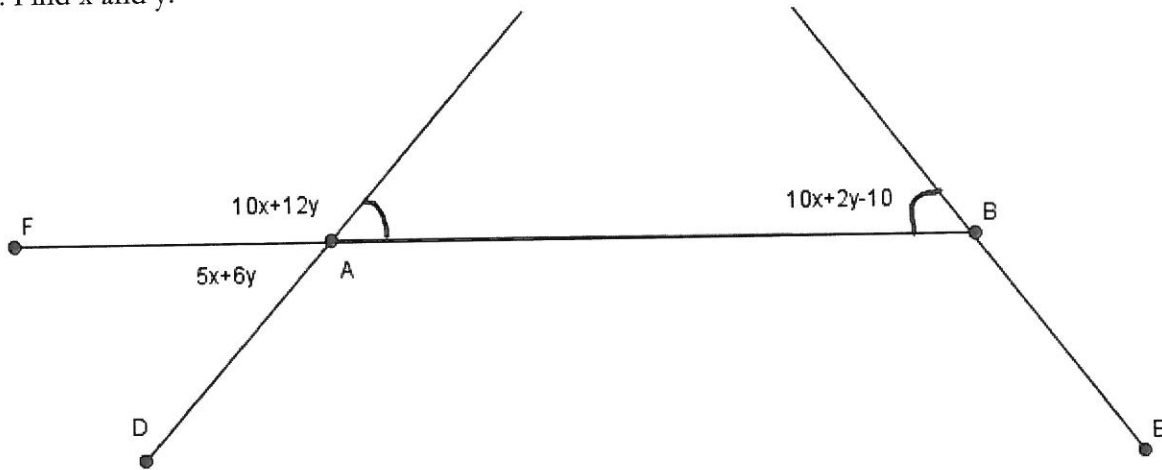
Points G, F, and B are coplanar _____

Planes M and P intersect at $\overrightarrow{AB}$ _____

$\overleftrightarrow{FG}$ lies in plane P _____

$\overleftrightarrow{EB}$ intersects $\overleftrightarrow{AB}$ at point B _____

10. Find x and y.

10x+12y

10x+2y-10
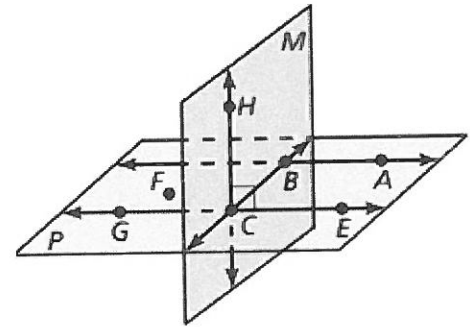
5x+6y

11. If you make a prediction or conjecture based of a few examples, what type of reasoning is that?

12. If you prove something using facts, definitions or theorems, what type of reasoning is that?