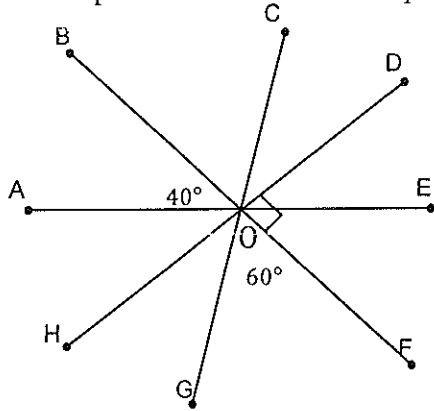


Unit 3 Geometry Honors Review

Use the picture below to answer questions 1& 2.

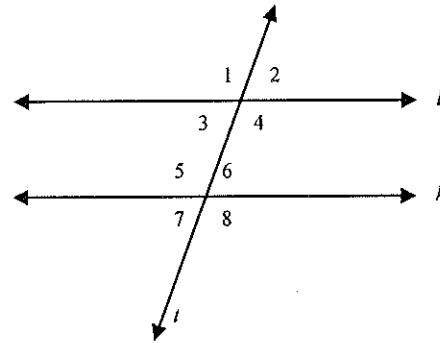


1. $m\angle GOE =$ _____

2. $m\angle EOD =$ _____

From the figure, label the:

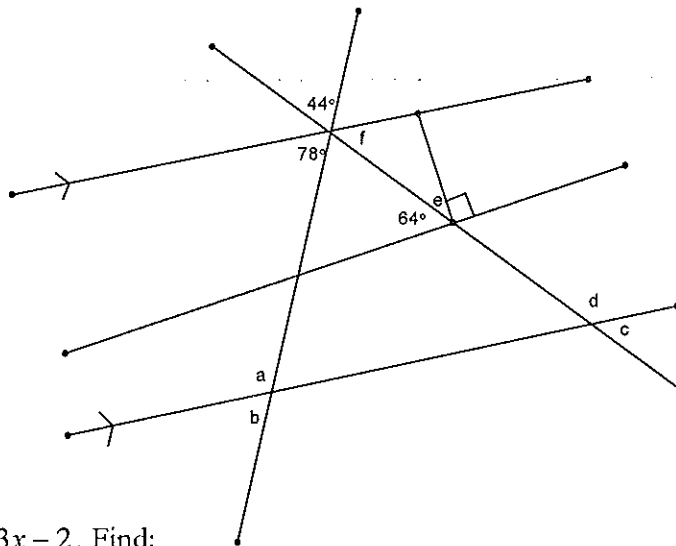
3. Corresponding Angles
4. Alternate Interior Angles
5. Consecutive Interior Angles
6. If Lines $l \parallel k$, and $m\angle 3 = 75$ find
 - a) $m\angle 1$
 - b) $m\angle 5$



c) $m\angle 6$

d) $m\angle 7$

7. Find each lettered angle measure.

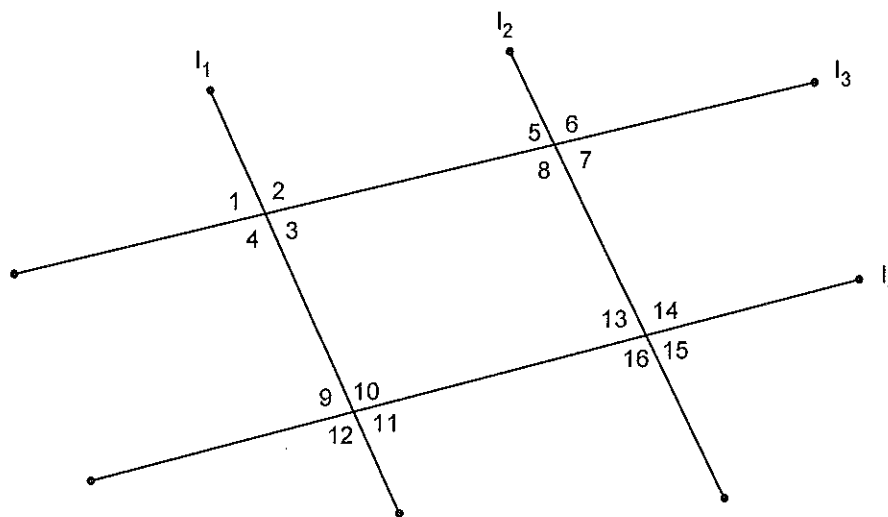


8. Given the equation of the line $y = 3x - 2$, Find:
 - a) Slope of a parallel line
 - b) Slope of a perpendicular line

Given the equation of the line $y = -7x + 3$, what is the... (4pts)

- c) slope of a line parallel to that line?
- d) slope of a line perpendicular to that line?

9. Write the equation of the line that is perpendicular to $y = -\frac{1}{4}x + 8$ through the point $(5, 3)$ in all 3 forms.



Using the picture above and the information given to decide if the specified lines are parallel.

10. l_1 and l_2

$$m\angle 1 = 4x + 30$$

$$m\angle 3 = 6x - 10$$

$$m\angle 5 = 3y + 30$$

$$m\angle 8 = 2y - 50$$

11. l_3 and l_4

$$m\angle 5 = 5x + 5$$

$$m\angle 6 = 4x + 40$$

$$m\angle 14 = 7y + 30$$

$$m\angle 16 = 5y + 50$$

Solve the system of equations

12. $5x + 7y = 77$

$5x + 3y = 53$

13. $9x + 3y = 2$

$-9x - y = 0$

14. Decide if the story below is an example of inductive or deductive reasoning. Explain your answer. Brenda has just been hired as a plumber's assistant. Her first task is to open all the water valves to release the pressure on the lines. She notices that the first four valves open by turning counterclockwise. She conjectures that all water valves open by turning counterclockwise.

15. Identify each statement as true or false for each of the following.

- If corresponding angles are congruent, then the two lines cut by the transversal are parallel.
- If lines are parallel and cut by a transversal, then alternate exterior angles are congruent.
- A linear pair of angles are complementary.
- Vertical angles are congruent.
- Consecutive interior angles always add up to 180° .

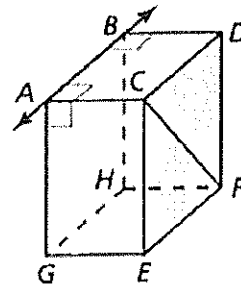
16. Think of each segment in the figure as part of a line.

a. Which line(s) appear perpendicular to \overleftrightarrow{AB} ?

b. Which line(s) appear parallel to \overleftrightarrow{AB} ?

c. Which line(s) appear skew to \overleftrightarrow{AB} ?

d. Which plane(s) appear parallel to plane ABC ?



Write an equation of the line passing through the given point that is parallel to the given line.

17. $A(3, -4)$, $y = -x + 8$

18. $A(-6, 5)$, $y = \frac{1}{2}x - 7$

19. $A(2, 0)$, $y = 3x - 5$

20. $A(3, -1)$, $y = \frac{1}{3}x + 10$

Write an equation of the line passing through the given point that is perpendicular to the given line.

21. $A(6, -1), y = -2x + 8$

22. $A(0, 3), y = -\frac{1}{2}x - 6$

23. $A(8, 2), y = 4x - 7$

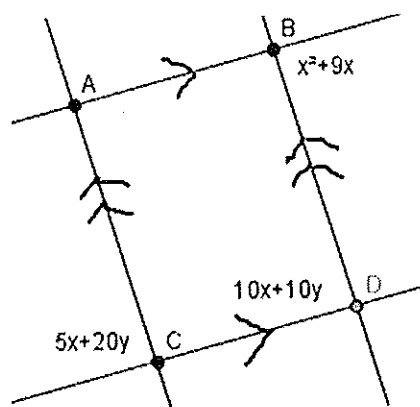
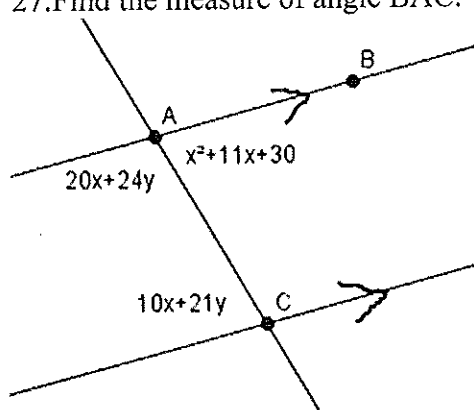
24. $A(-1, 5), y = \frac{1}{7}x + 4$

Find the distance from point A to the given line.

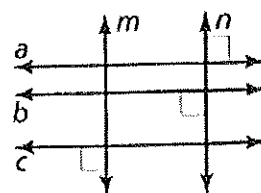
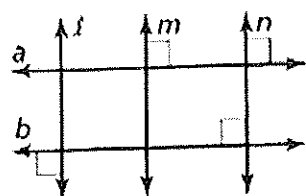
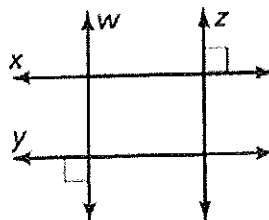
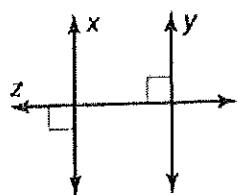
25. $A(2, -1), y = -x + 4$

26. $A(-2, 3), y = \frac{1}{2}x + 1$

27. Find the measure of angle BAC.

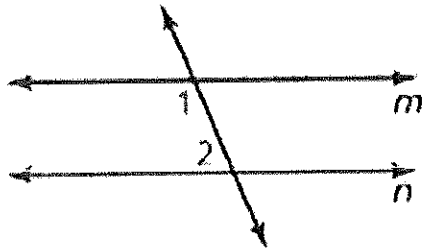


28. Determine which lines, if any, must be parallel. Explain your reasoning.



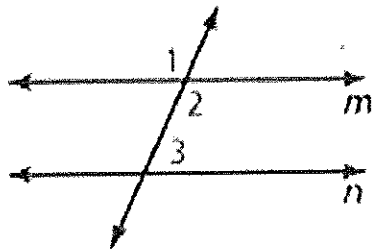
29. Given $m\angle 1 = 115^\circ$, $m\angle 2 = 65^\circ$

Prove $m \parallel n$



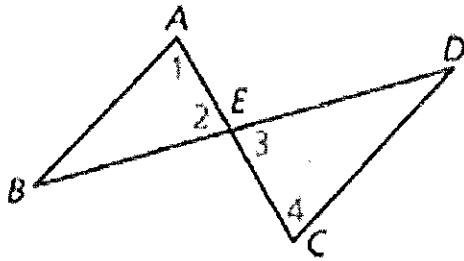
Given $\angle 1$ and $\angle 3$ are supplementary.

Prove $m \parallel n$



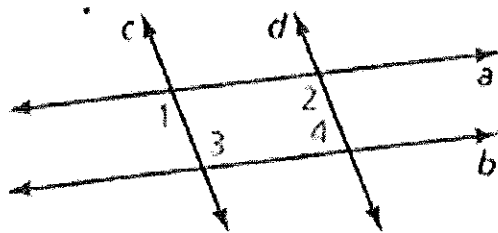
Given $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$

Prove $\overline{AB} \parallel \overline{CD}$



Given $a \parallel b$, $\angle 2 \cong \angle 3$

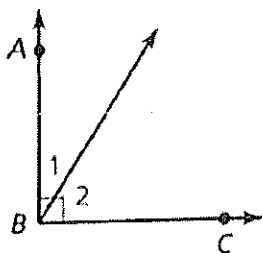
Prove $c \parallel d$



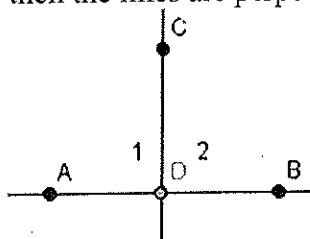
30. If two sides of two adjacent acute angles are perpendicular, then the angles are complementary.

Given $\overrightarrow{BA} \perp \overrightarrow{BC}$

Prove $\angle 1$ and $\angle 2$ are complementary.



31. Prove the Linear Pair Perpendicular Theorem. If two lines intersect to form a linear pair of congruent angles, then the lines are perpendicular. Given: $\angle 1 = \angle 2$.



32. Prove the Perpendicular Transversal Theorem. In a plane, if a transversal is perpendicular to one of the two parallel lines, then it is perpendicular to the other line. Given $h \parallel k$ and $j \perp h$, prove $j \perp k$.

