

Lesson 1.2

1. Name the intersection of planes FGED and BCDE _____

2. Name another point on plane GFB _____

3. Shade plane GFB

4. Name the intersection of AHC and GDC _____

5. Name the intersection of \overleftrightarrow{DC} and \overleftrightarrow{ED} _____

6. Name the plane represented by the top of the box _____

7. Name any line on the top of the box _____

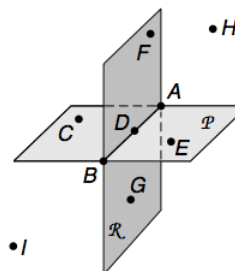
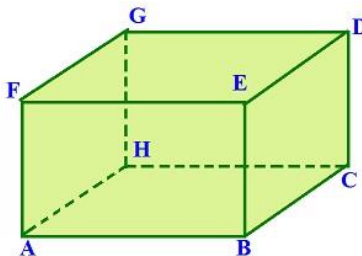
True or false:

8. A, D, and B are collinear _____

9. A, D, E are collinear _____

10. C, D, A are coplanar _____

11. F, E, G are coplanar _____



- **Planes** are named with a minimum of 3 non-collinear points. There is not a symbol for planes

- **Lines** are named with two points (\overleftrightarrow{BC})

- Two planes intersect in a **line**

- Two lines intersect in a **point**

- **Collinear** points form 1 line

Lesson 1.3

True or false:

12. \overleftrightarrow{AH} and \overleftrightarrow{DC} are skew lines _____

13. \overleftrightarrow{FG} and \overleftrightarrow{GD} are skew lines _____

14. \overleftrightarrow{HC} and \overleftrightarrow{AB} are skew lines _____

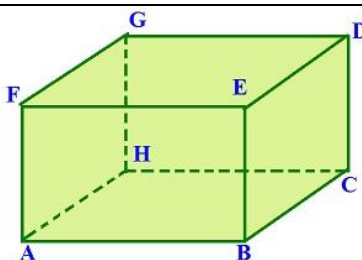
15. \overleftrightarrow{GH} and \overleftrightarrow{BC} are parallel lines _____

16. \overleftrightarrow{AB} and \overleftrightarrow{BC} are parallel lines _____

17. \overleftrightarrow{GD} and \overleftrightarrow{FE} are parallel lines _____

18. FGH and EDC are parallel planes _____

19. GDH and EBC are parallel planes _____



- **Skew lines** are not parallel, never intersect, and they are non-coplanar

- **Parallel lines** never intersect but are coplanar

- **Opposite rays** have the same endpoint and extend in opposite directions

- Undefined terms cannot be measured

Lesson 1.3 cont.

20. \overrightarrow{CA} and \overrightarrow{BD} are opposite rays _____

21. \overrightarrow{CA} and \overrightarrow{CB} are opposite rays _____

22. \overrightarrow{CB} and \overrightarrow{CD} are opposite rays _____

23. Which of the following is an acceptable name for the line? _____

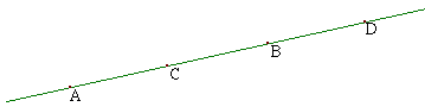
(more than one answer is ok)

A. \overrightarrow{AB} B. BC C. $\overleftrightarrow{ABCD}$ D. \overrightarrow{CB}

E. \vec{A} F. \overleftrightarrow{ABC} G. \overrightarrow{AD} H. AB

24. Circle the three terms that are considered undefined in geometry:

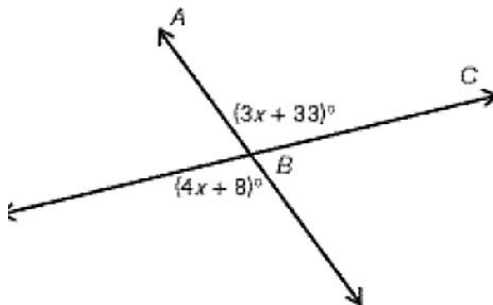
Point Circle Segment Line Plane Angle



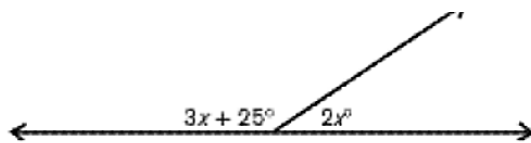
Lesson 2.5

Solve for x then find the measure of the angles

25. a.



b.

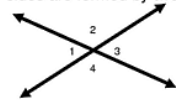


26. If possible, find the complement and supplement of the angles:

- | | | |
|---------------|---------------|----------------|
| a) 24° | b) 57° | c) 112° |
| comp: _____ | comp: _____ | comp: _____ |
| supp: _____ | supp: _____ | supp: _____ |

Vertical Angles are congruent

• **Vertical Angles** – 2 angles that are not adjacent and their sides are formed by two intersecting lines.



- $\angle 1$ and $\angle 3$ are vertical angles.
- $\angle 2$ and $\angle 4$ are vertical angles.

Complimentary Angles

$$A + B = 90^\circ$$

Supplementary Angles



$$A + B = 180^\circ$$

Linear Pairs are supplementary

Lesson 3.1

Name the angle pairs.

27. $\angle 1$ and $\angle 5$ _____

28. $\angle 3$ and $\angle 6$ _____

29. $\angle 4$ and $\angle 5$ _____

30. $\angle 2$ and $\angle 6$ _____

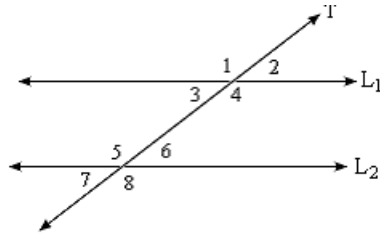
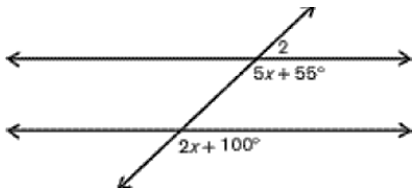
31. $\angle 1$ and $\angle 8$ _____

32. $\angle 2$ and $\angle 7$ _____

33. $\angle 3$ and $\angle 7$ _____

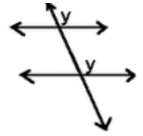
34. $\angle 1$ and $\angle 4$ _____

35. The two lines are parallel, solve for x: _____



Congruent Angles

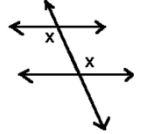
Corresponding:



CA

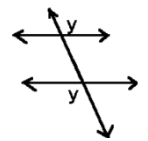
Alternate Interior:

AIA



Alternate Exterior:

AEA



Vertical Angles:

VA



Lesson 3.1 cont

Name the angle pairs.

36. $\angle 2$ and $\angle 8$ _____

37. $\angle 4$ and $\angle 6$ _____

38. $\angle 3$ and $\angle 5$ _____

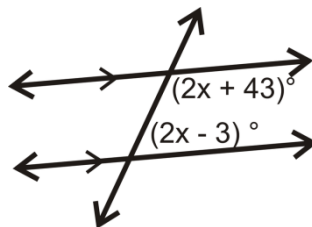
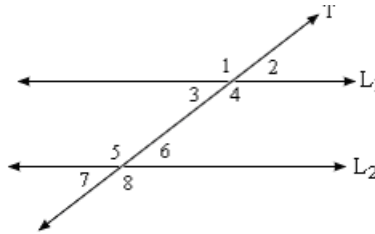
39. $\angle 1$ and $\angle 7$ _____

40. $\angle 1$ and $\angle 2$ _____

41. $\angle 6$ and $\angle 8$ _____

42. if $m\angle 1 = 110^\circ$, $m\angle 7 =$ _____

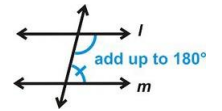
43. The two lines are parallel, solve for x _____



Supplementary Angles

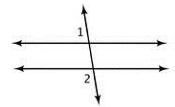
Same Side Interior:

SSIA



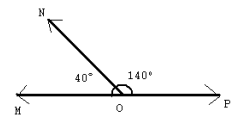
Same Side Exterior:

SSEA



Linear Pair:

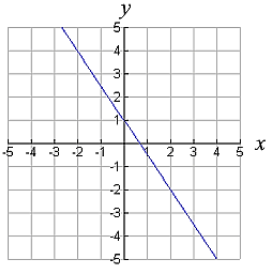
LP



Lesson 3.5

44. Find the slope of the line passing through the points (4,3) and (-5,-2).

45. Find the slope of the line.



46. Find the equation of the line that has a slope of -2 and a y-intercept of -9.

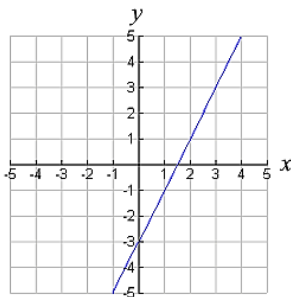
47. Find the equation of the line that has a slope of 6 and passes through the point (-3,5).

48. What is the slope of the line $3x + 2y = 12$?

49. Which is the equation of a line whose slope is undefined?

- A. $x = -5$ B. $y = 7$ C. $x = y$ D. $x + y = 0$

50. What is the equation of this line?



51. Write the equation of the line with slope $\frac{1}{2}$ that passes through the point (3, -4) in point slope form.

$$\frac{y_2 - y_1}{x_2 - x_1}$$

Slope: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Slope Intercept Form

$$y = mx + b$$

Standard Form

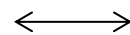
$$Ax + By = C$$

Point Slope Form

$$y - y_1 = m(x - x_1)$$

Horizontal Line

slope of zero



equation

$$y = b$$

Vertical Line

undefined slope



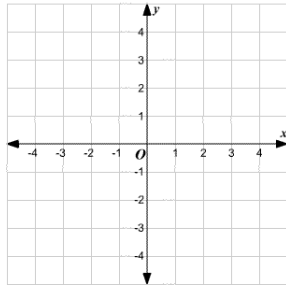
equation

$$x = a$$

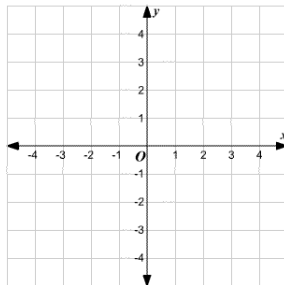
Lesson 3.6

Write the equation of the line that is **parallel** to the given line through the point (you may solve the equation or graph)

52. $y = 2x + 3$; (1, 1)



53. $y = \frac{2}{3}x - 2$; (-3, 2)



Parallel lines have the same slope and different y-intercepts.

$y = 3x + 5$ and $y = 3x + 7$ are parallel

$y = -3x - 2$ and $y = 3x + 5$ are NOT parallel

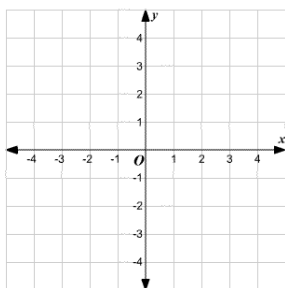
Equation method: plug in values for m, x, and y into $y = mx + b$; solve for b. write equation

Graphing method: graph the original line. Plot the point. From this point use the same slope as the line. Find the y-intercept, write equation.

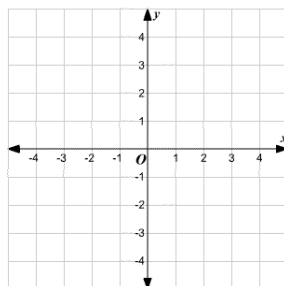
Lesson 3.6 cont.

Write the equation of the line **perpendicular** to the given line through the point (you may graph or write an equation).

54. $y = 3x - 2$; (3, -2)



55. $y = -\frac{1}{2}x + 4$; (1, 1)



Perpendicular lines have opposite reciprocal slopes.

$y = 3x + 5$ and $y = -\frac{1}{3}x - 1$ are perpendicular.

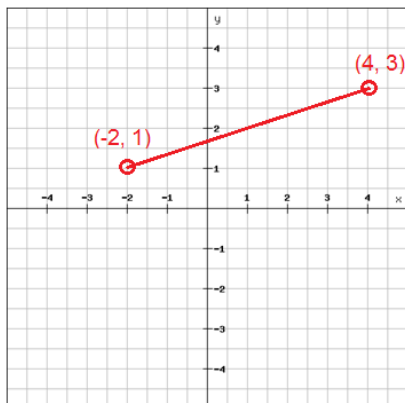
$y = 2x + 1$ and $y = \frac{1}{2}x - 1$ are NOT perpendicular.

To get the equations for perpendicular lines follow the steps for parallel EXCEPT make sure to use the opposite reciprocal slope!

Lesson 1.6

Find the length of the segment (distance between the points) and the midpoint of the segment:

56.



Distance formula:

$$\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

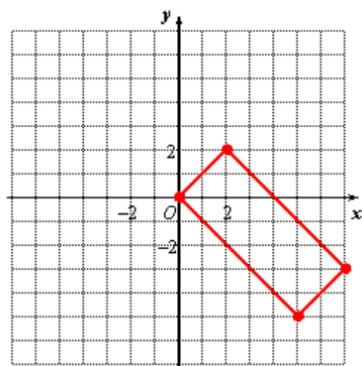
Midpoint formula:

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

Lesson 1.7

Find the perimeter and area of each figure:

57.



Use the distance formula to find the length of each segment

Perimeter is the distance around the shape - add up all sides

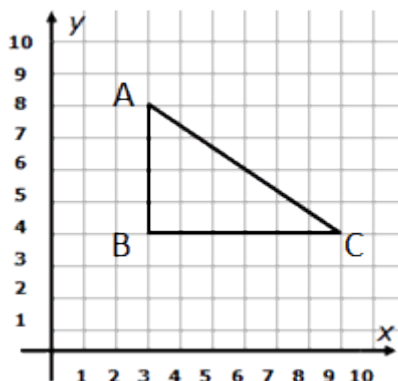
Area is the space inside the figure

Rectangle $A = bh$

Triangle $A = \frac{1}{2} bh$

(base and height are perpendicular sides)

58.



Lesson 1.5 and 5.2

59. \overleftrightarrow{PQ} is the perpendicular bisector of _____

60. M is the _____ of \overline{AB}

61. $m\angle PMB$ _____

62. If $\overline{AB} = 14$ cm, then $\overline{AM} =$ _____

And $\overline{BM} =$ _____

63. $\overline{AM} = 7x - 12$ and $\overline{BM} = 2x + 8$

X = _____

\overline{AM} _____

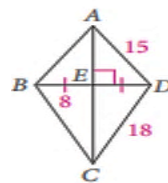
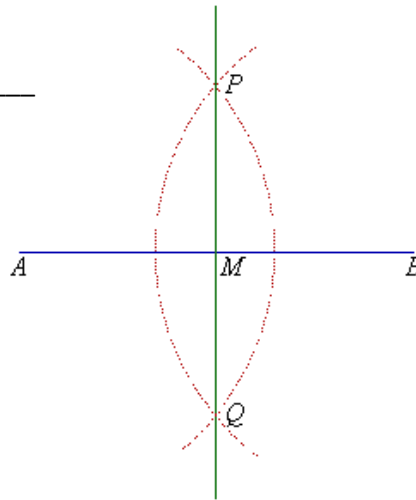
\overline{BM} _____

\overline{AB} _____

64. Place point R anywhere along \overleftrightarrow{PQ} . What do you know about the lengths of \overline{RA} and \overline{RB} ? _____

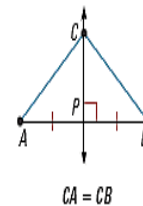
65. Points A and C are on the perpendicular bisector of \overline{BD}

\overline{AB} _____ \overline{DE} _____ \overline{BC} _____



The **perpendicular bisector** of a segment splits the segment into two congruent segments and forms a 90° angle

Theorem 5-2: if a point is on the perpendicular bisector of a segment, then it is equidistant to the endpoints of the segment.



\overleftrightarrow{CP} is the perpendicular bisector of \overline{AB} , then $CA = CB$.

Lesson 1.5

\overleftrightarrow{BD} is the bisector of $\angle ABC$

66. $\angle ABD$ is congruent to _____

67. $m\angle ABC = 62^\circ$.

$m\angle ABD$ _____ $m\angle CBD$ _____

68. $m\angle ABD = 25^\circ$.

$m\angle CBD$ _____ $m\angle ABC$ _____

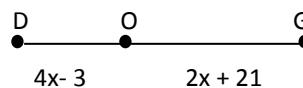
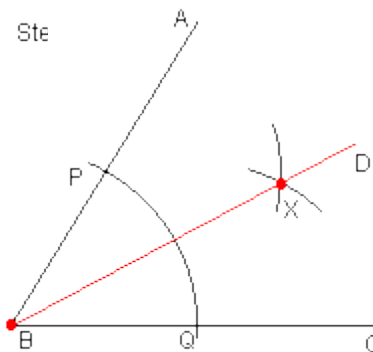
69. $\angle ABD = (8x - 4)^\circ$ $\angle CBD = (2x + 32)^\circ$

X = _____

$m\angle ABD =$ _____ $m\angle CBD$ _____ $m\angle ABC$ _____

70. Use the segment addition postulate to find x. Then find the length of each segment. $DG = 66$

X = _____ $DO =$ _____ $OG =$ _____



An **angle bisector** divides an angle into two congruent angles.

Segment Addition Postulate

$$AB + BC = AC$$

