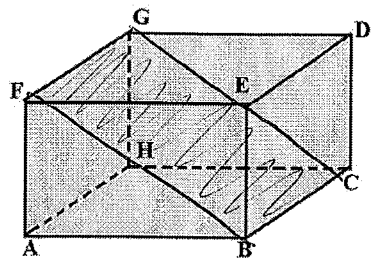
Name Key Geometry Unit 2 Mid-Unit Review

**1.2**




1. Name the intersection of planes FGED and BCDE $\overleftrightarrow{DE}$

2. Name another point on plane GFB C

3. Shade plane GFBC

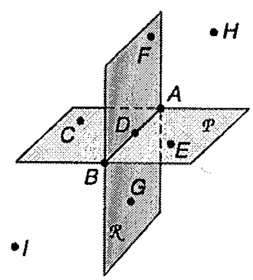
4. Name the intersection of AHC and GDC $\overleftrightarrow{CH}$

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

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

7. Name any line on the top of the box $\overleftrightarrow{GF}$, $\overleftrightarrow{GD}$, $\overleftrightarrow{DE}$, $\overleftrightarrow{EF}$

True or false:




8. A, D, and B are collinear T

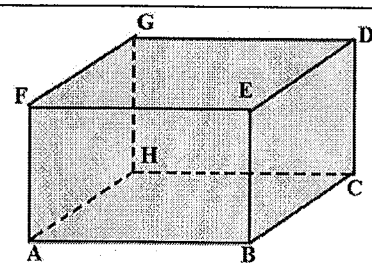
9. A, D, E are collinear F

10. C, D, A are coplanar T

11. F, E, G are coplanar F

- Planes are named with a minimum of 3 (noncollinear) 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

**1.3 True or false:**




1. $\overleftrightarrow{AH}$ and $\overleftrightarrow{DC}$ are skew lines T

2. $\overleftrightarrow{FG}$ and $\overleftrightarrow{GD}$ are skew lines F

3. $\overleftrightarrow{HC}$ and $\overleftrightarrow{AB}$ are skew lines F

4. $\overleftrightarrow{GH}$ and $\overleftrightarrow{BC}$ are parallel lines F

5. $\overleftrightarrow{AB}$ and $\overleftrightarrow{BC}$ are parallel lines F

6. $\overleftrightarrow{GD}$ and $\overleftrightarrow{FE}$ are parallel lines T

7. FGH and EDC are parallel planes T

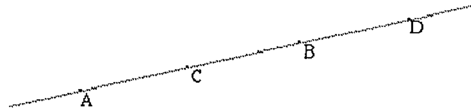
8. GDH and EBC are parallel planes F

- Skew lines are not parallel and never intersect(they are non-coplanar)
- Parallel lines never intersect (coplanar)

1.3 cont.

9. $\overrightarrow{CA}$ and $\overrightarrow{BD}$ are opposite rays F

10. $\overrightarrow{CA}$ and $\overrightarrow{CB}$ are opposite rays T




11. $\overrightarrow{CB}$ and $\overrightarrow{CD}$ are opposite rays F

12. A, D Which of the following is an acceptable name for the line? (more than 1 answer is ok)

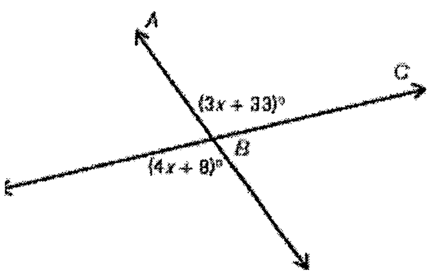
A. $\overleftrightarrow{AB}$ B. BC C. $\overleftrightarrow{ABCD}$ D. $\overleftrightarrow{CB}$ E. $\overleftrightarrow{A}$ F. $\overleftrightarrow{ABC}$ G. $\overline{AD}$ H. AB

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

Point Circle Segment Line Plane Angle

- Opposite rays have the same endpoint and extend in opposite directions
- Undefined terms cannot be measured

**2.5** Solve for x then find the measure of the angles

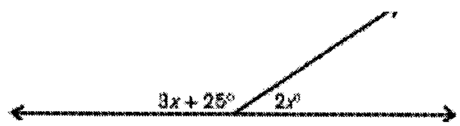



$3x+33=4x+8$

$x=25$

$4(25)+8=108$

$3(25)+33=108$




$3x+25+2x=180$

$5x+25=180$

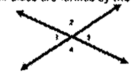
$x=31$

$3(31)+25=118$

$2(31)=62$

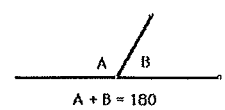
Vertical angles are congruent.

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




- ∠1 and ∠3 are vertical angles.
- ∠2 and ∠4 are vertical angles.

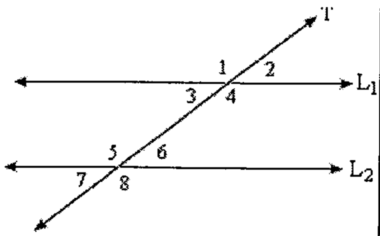
Linear pairs are

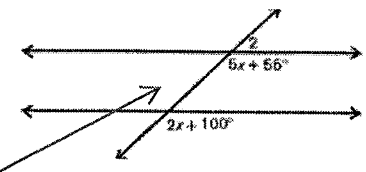



supplementary (sum to 180)

3.1

1. ∠1 and ∠5 CA
2. ∠3 and ∠6 AIA
3. ∠4 and ∠5 AIA
4. ∠2 and ∠6 CA
5. ∠1 and ∠8 AEA
6. ∠2 and ∠7 AEA
7. ∠3 and ∠7 CA
8. ∠1 and ∠4 VA
9. solve for x: 15



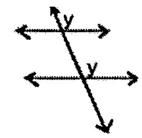




$5x+55=2x+100$

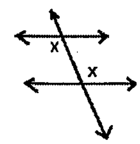
$x=15$

Congruent angles:

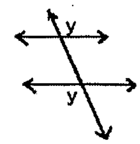
CA:



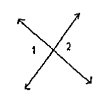

AIA:




AEA:

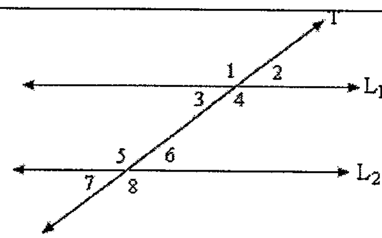


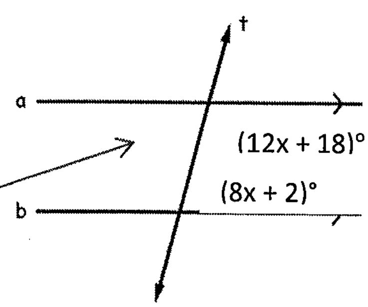

VA:




3.1 cont

10. ∠2 and ∠8 SSEA
11. ∠4 and ∠6 SSIA
12. ∠3 and ∠5 SSIA
13. ∠1 and ∠7 SSEA
14. ∠1 and ∠2 LP
15. ∠6 and ∠8 LP
16. if m∠1 = 110°, m∠7 = 70°
17. solve for x ______



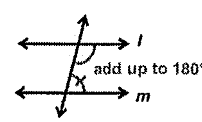

$12x+18+8x+2=180$

$20x+20=180$

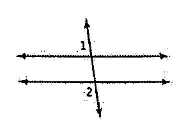
$x=8$

Supplementary Angles:

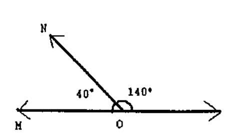
SSIA:




SSEA:




Linear Pair:

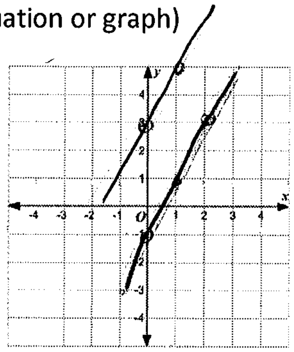


## 3.6

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

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

$y = 2x - 1$



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

$x \quad y$

$m = 2/3$

$y = mx + b$

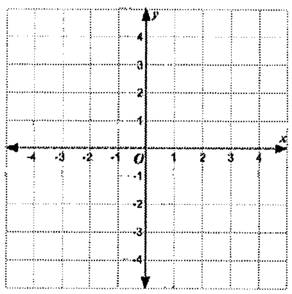
$2 = \frac{2}{3}(-3) + b$

$2 = -2 + b$

$+2 \quad +2$

$4 = b$

$y = \frac{2}{3}x + 4$



**Parallel lines** have the <u>same slope</u> and different y-intercepts.

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

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

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.

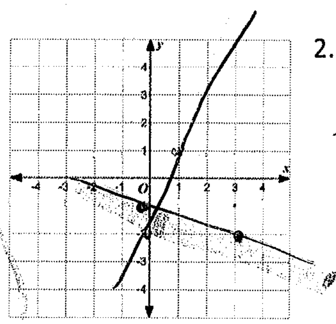
Equation method: plug in values for m, x, and y into y = mx + b; solve for b. write equation.

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

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

$\perp m = -\frac{1}{3}$

$y = -\frac{1}{3}x - 1$



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

$x \quad y$

$\perp m = 2$

$y = mx + b$

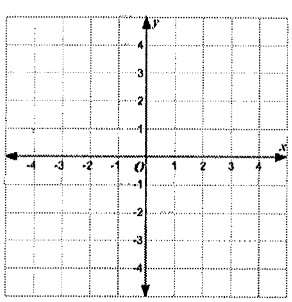
$1 = 2(1) + b$

$1 = 2 + b$

$-2 \quad -2$

$-1 = b$

$y = 2x - 1$



Perpendicular lines have **<u>opposite reciprocal</u>** slopes.

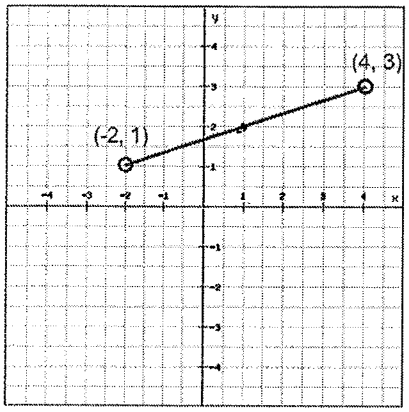
Y = 3x + 1 and y = $-\frac{1}{3}$x – 1 are perpendicular.

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!

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

1.




$$\sqrt{(-2-4)^2+(1-3)^2}$$

$$\sqrt{40} = 6.3$$

$$\left(\frac{-2+4}{2}, \frac{1+3}{2}\right)$$

$$(1,2)$$

Distance formula:

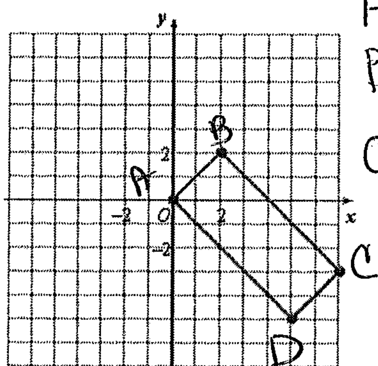
$$\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$

Midpoint formula:

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

1.7 find the perimeter and area of each figure:

1.




$AB = \sqrt{(2-0)^2+(2-0)^2} = \sqrt{8} = 2.828$

$BC = \sqrt{(2-7)^2+(2--3)^2} = \sqrt{50} = 7.071$

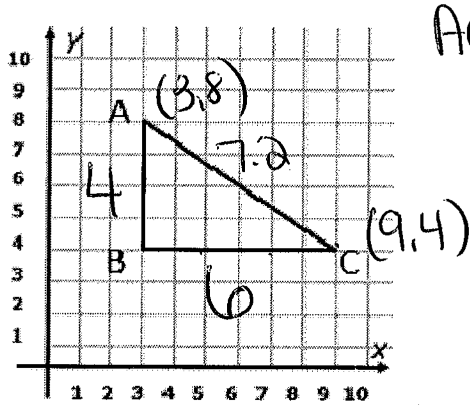
$CD = \sqrt{(7-5)^2+(-3--5)^2} = \sqrt{8} = 2.828$

$AD = \sqrt{(0-5)^2+(0--5)^2} = \sqrt{50} = 7.071$

$A = 2.828(7.071) = 19.996 \approx 20$ units$^2$

$P = 2.828+7.071+2.828+7.071 = 19.798 = 19.8$ units

2.




$AC = \sqrt{(3-9)^2+(8-4)^2}$

$\sqrt{52} = 7.2$

$P = 4+6+7.2 = 17.2$

$A = \frac{1}{2} \cdot 4 \cdot 6 = 12$ units$^2$

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 = ½ bh

(base and height are perpendicular sides)

1.5 and 5.2

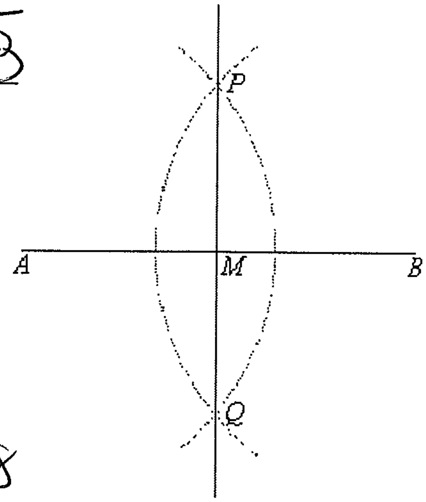
1. $\overleftrightarrow{PQ}$ is the perpendicular bisector of $\overline{AB}$

2. M is the midpoint of $\overline{AB}$

3. m∠PMB 90°

4. If $\overline{AB}$ = 14 cm, then $\overline{AM}$ = 7

And $\overline{BM}$ = 7




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

X = 4 $7X-12=2X+8$

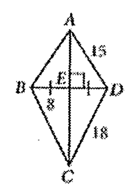
$\overline{AM}$ 16 7(4)+12 $X=4$

$\overline{BM}$ 16 2(4)+8

$\overline{AB}$ 32

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

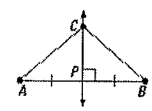
7. Points A and C are on the perpendicular bisector of $\overline{BD}$




$\overline{AB}$ 15 $\overline{DE}$ 8 $\overline{BC}$ 18

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.

1.5

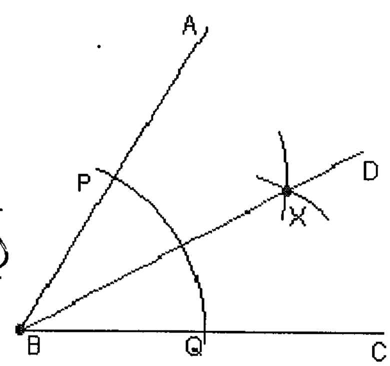
$\overrightarrow{BD}$ is the bisector of ∠ABC

1. ∠ABD is congruent to ∠CBD

2. m∠ABC = 62°. m∠ABD 31 m∠CBD 31

3. m∠ABD = 25°. m∠CBD 25 m∠ABC 50

4. ∠ABD = (8x – 4)° ∠CBD = (2x + 32)°




X = 6

m∠ABD = 44 m∠CBD 44 m∠ABC 88 $8X-4=2X+32$

$X=6$

An angle bisector divides an angle into tow congruent angles.