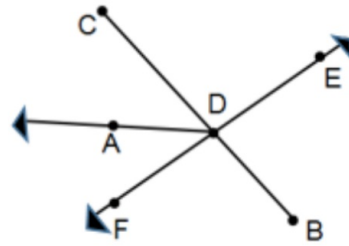
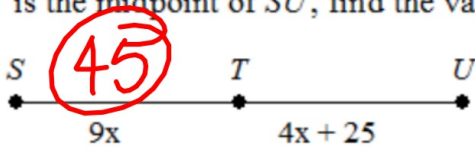


Identify the following from the diagram. Make sure you use appropriate symbols and markings.

1. A line  $\overleftrightarrow{FE}$
2. A segment  $\overline{CB}$
3. A ray  $\overrightarrow{DA}$
4. An angle  $\angle FDA$
5. Identify 3 collinear points  $\bullet FDE$



6. If  $T$  is the midpoint of  $SU$ , find the values of  $x$  and  $ST$ . The diagram is not to scale.



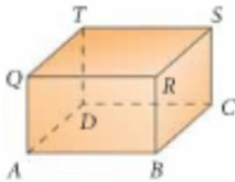
$$\begin{aligned} 9x &= 4x + 25 \\ 5x &= 25 \\ x &= 5 \end{aligned}$$

**Section 1.3 and 1.4**

***Vocabulary Words***

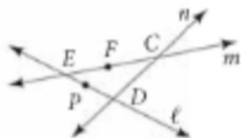
Points that lie on the same line are collinear.  
 Points and lines that lie on the same plane are coplanar.  
 Two parts of a line are a ray and a segment.  
 Lines that are coplanar and do not intersect are parallel lines.  
 Lines in space that are not parallel and do not intersect are skew lines.  
 Planes that do not intersect are parallel planes.

Use the diagram below to answer questions 1 – 5.



1. Name three lines that intersect at R. QR, SR, BR
2. Points D, T, S and C are coplanar.
3. Plane QTSR is parallel to plane ABCD.
4. Name a line that is parallel to  $\overrightarrow{BC}$ .  $\overrightarrow{AD}$
5. Name a line that is skew to  $\overrightarrow{BC}$ .  $\overleftrightarrow{TS}$

Use the diagram below to answer questions 6 – 9.



6. Name line  $m$  in two other ways.

$\overleftrightarrow{EC}$   $\overleftrightarrow{EF}$

7. C is the intersection of which two lines?

line  $n$  &  $m$

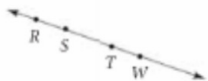
8. Name three collinear points.

$\bullet EFC$

9. Are P, E, and C collinear?

NO.

Use the diagram below to answer questions 10-12.



10. Name all line segments.

$\overline{RW}$   $\overline{RS}$

11. Name all rays.

$\overrightarrow{SW}$   $\overrightarrow{TR}$

12. Name a pair of opposite rays.

$\overrightarrow{TW}$   $\overrightarrow{TR}$

## Section 1.5 and 1.6

### **Vocabulary Words**

Segments with the same length are  $\cong$  segments.

The midpt. of a segment divides the segment into two congruent segments.

Two rays with the same endpoint form an oppray

Angles with the same measure are  $\cong$  angles.

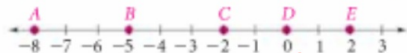
Acute angles measure  $0^\circ < \angle < 90^\circ$ .

Obtuse angles measure  $90^\circ < \angle < 180^\circ$ .

Right angles measure  $= 90^\circ$ .

Straight angles measure  $= 180^\circ$ .

Use the number line below for questions 1 – 3.



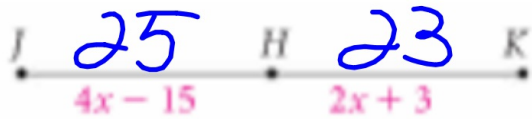
1.  $AB = | -8 - (-5) |$       2.  $BD = 5$

③

3. Name two congruent segments.

$\overline{CD}$   $\overline{DE}$

4.  $JK = 48$ . Find  $x$ ,  $JH$  and  $HK$ .



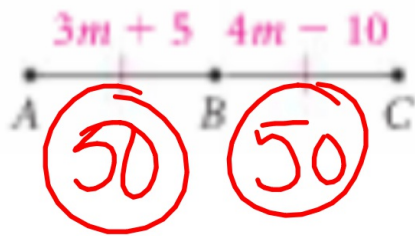
$$4x - 15 + 2x + 3 = 48$$

$$6x - 12 = 48$$

$$6x = 60$$

$$x = 10$$

5. Find  $m$ ,  $AB$ ,  $BC$ , and  $AC$ .

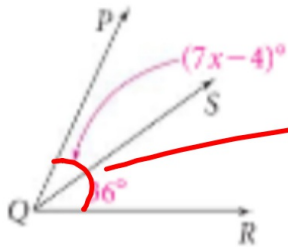


$$3m + 5 = 4m - 10$$

$$5 = m - 10$$

$$m = 15$$

Use the diagram below for questions 6 and 7.



$$82^\circ$$

$$7x - 4 + 36 = 82$$

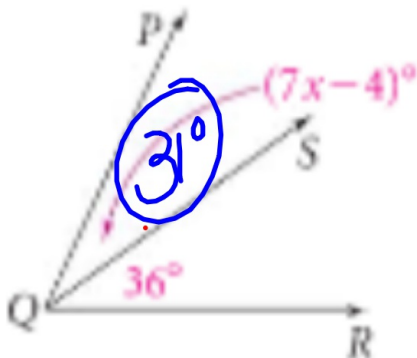
$$7x + 32 = 82$$

6. The  $m\angle PQR = 82^\circ$ . Find  $m\angle PQS$ .

$$7\left(\frac{50}{7}\right) - 4 = 46^\circ$$

$$7x = 50$$

$$x = \frac{50}{7}$$



7. Find  $m\angle PQS$  if  $m\angle PQR = 4x + 47$ .

$$7x - 4 + 36 = 4x + 47$$

$$7x + 32 = 4x + 47$$

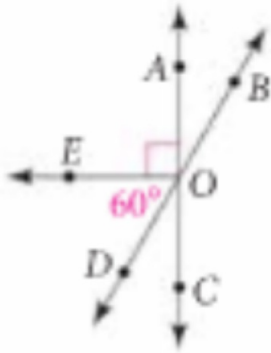
$$3x + 32 = 47$$

$$3x = 15$$

$$x = 5$$



Use the diagram for questions 8 – 13.



8. Name a right angle.

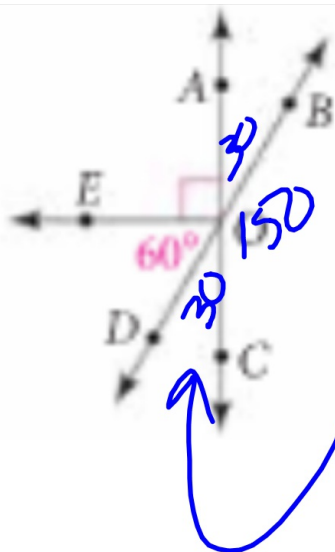
$\angle AOE$

9. Name a pair of vertical angles.

$\angle AOB$  &  $\angle DOC$

10. Name a pair of complementary angles.

$\angle EOD$  &  $\angle DOC$



11. Name a pair of supplementary angles.

$\angle AOD$  &  $\angle DOC$

12. Name an angle adjacent to  $\angle DOE$ .

$\angle DOC$

13. Given  $m\angle EOD = 60^\circ$ , find all other individual angles.

## Section 1.8

### *Vocabulary Words and Formulas*

The distance between two points in the coordinate plane can be found with the formula:

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

The midpoint of two points in the coordinate plane can be found with the formula:

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

Find the distance between the points to the nearest tenth.

1. A(-1, 5) and B(0, 4)

$$\begin{aligned} d &= \sqrt{(-1 - 0)^2 + (5 - 4)^2} \\ &= \sqrt{1 + 1} = \sqrt{2} \\ &= 1.4 \end{aligned}$$



2. C(-1, -1) and D(6, 2)

$$\begin{aligned}d &= \sqrt{(-1-6)^2 + (-1-2)^2} \\&= \sqrt{49 + 9} \\&= \sqrt{58} = 7.6\end{aligned}$$

3. E(-7, 0) and F(5, 8)

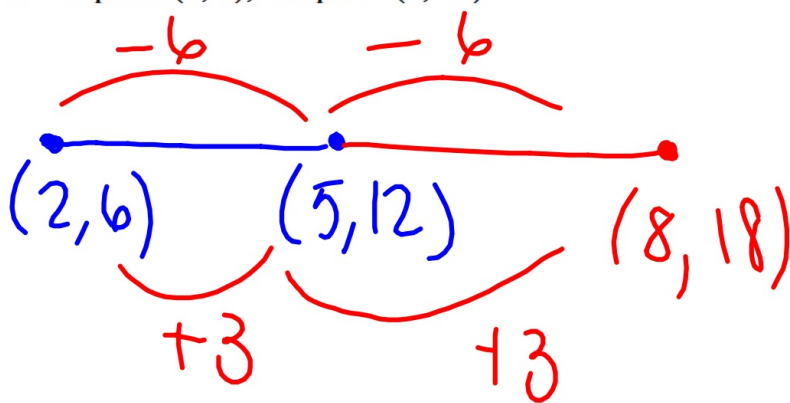
$$\begin{aligned}d &= \sqrt{(-7-5)^2 + (0-8)^2} \\&= \sqrt{144 + 64} = \sqrt{208} \\&= 14.4\end{aligned}$$

4.  $\overline{GH}$  has endpoints  $G(-3, 2)$  and  $H(3, 8)$ . Find the midpoint of  $\overline{GH}$ .

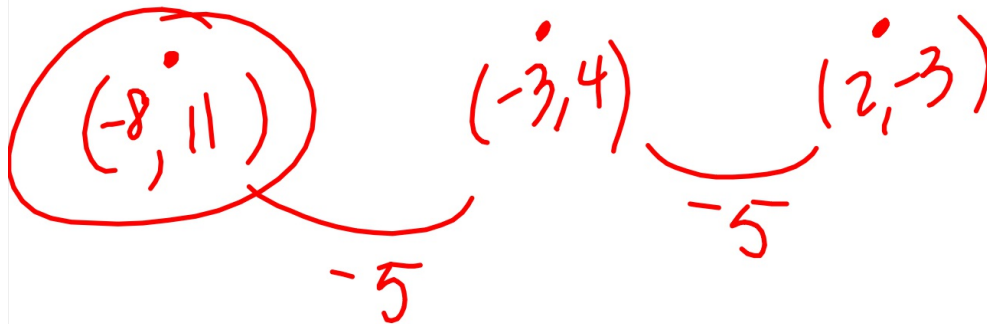
$$M = \left( \frac{-3+3}{2}, \frac{2+8}{2} \right) \\ = (0, 5)$$

An endpoint and a midpoint are given. Find the coordinates of the other endpoint.

5. endpoint  $(2, 6)$ , midpoint  $(5, 12)$



6. endpoint  $(2, -3)$ , midpoint  $(-3, 4)$

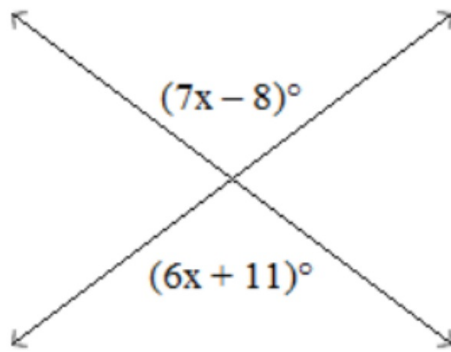


More practice...

If  $EF = 2x - 12$ ,  $FG = 3x - 15$ , and  $EG = 23$ , find the values of  $x$ ,  $EF$ , and  $FG$ . The drawing is not to scale.



Find the value of  $x$ .



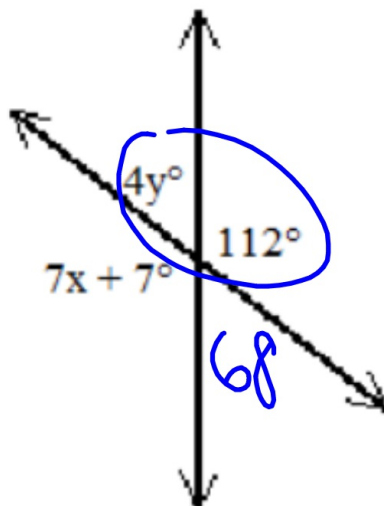
Drawing not to scale

$$7x - 8 = 6x + 11$$

$$x - 8 = 11$$

$$x = 19$$

Find the values of  $x$  and  $y$ .



Drawing not to scale

$$7x + 7 = 112$$

$$7x = 105$$

$$x = 15$$

$$4y + 112 = 180$$

$$4y = 68$$

$$y = 17$$