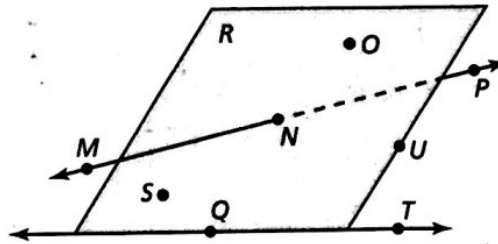


Chapter 1

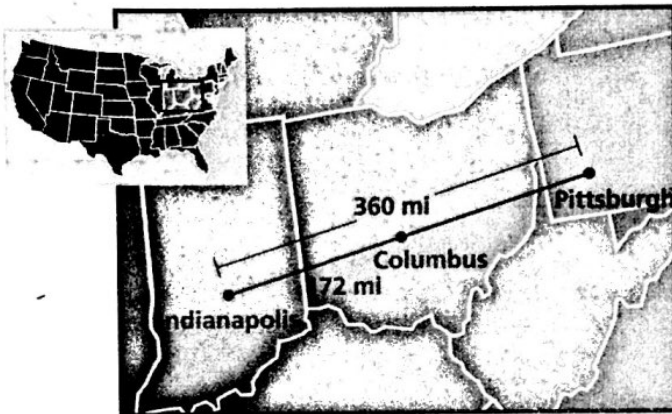
Use the figure.

1. Give another name for plane R .
2. Name a line that intersects the plane.
3. Name two rays.
4. Name a point on plane R .
5. The cities shown on the map lie approximately in a straight line. Find the distance from Pittsburgh, Pennsylvania, to Columbus, Ohio.



Answers

- PLANE
1. $\overline{SNU}, \overline{UNO}, \overline{QNS}$
 2. $\overleftrightarrow{MP}, \overleftrightarrow{MN}, \overleftrightarrow{NP}$
 3. $\overrightarrow{QT}, \overrightarrow{NP}, \overrightarrow{NM}$
 4. O, N, S, U, Q
 5. 188
 6. $(-\frac{3}{2}, 7)$
 7. $(\frac{9}{2}, -\frac{3}{2})$
 8. $(7, 5)$
 9. $(-7, -1)$
 10. $\overline{RT} = 20$



$$\begin{array}{r} 360 \\ 172 \\ \hline 532 \\ 188 \end{array}$$

The endpoints of \overline{AB} are given. Find the coordinates of the midpoint C .

6. $A(-1, 9)$ and $B(-2, 5)$

$$-1 + (-2) = -\frac{3}{2}$$

$$9 + 5 = \frac{14}{2} = 7$$

7. $A(12, -5)$ and $B(-3, 2)$

$$12 + (-3) = \frac{9}{2}$$

$$-5 + 2 = -\frac{3}{2}$$

The midpoint M and one endpoint of \overline{CE} are given. Find the coordinates of the other endpoint.

8. $M(\frac{5}{2}, 1)$ and $E(-2, -3)$

$$-2 + x = \frac{5}{2} \cdot 2$$

$$-3 + y = 1 \cdot 2$$

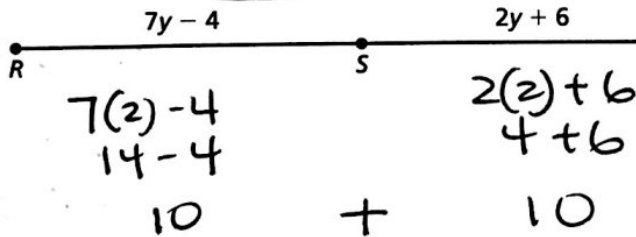
$$\begin{array}{r} -3 + y = 2 \\ +3 \quad +3 \\ \hline y = 5 \end{array}$$

9. $M(-1, 3)$ and $C(-4, 1)$

$$\begin{array}{r} -4(2) = -8 \\ -8 + 1 = -7 \\ -7 = x \end{array}$$

$$\begin{array}{r} -2 + x = 5 \\ +2 \quad +2 \\ \hline x = 7 \end{array}$$

10. Identify the segment bisector of \overline{RT} . Then find RT



$$\begin{array}{r} 7(2) - 4 \\ 14 - 4 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 2(2) + 6 \\ 4 + 6 \\ \hline 10 \end{array}$$

$$10 + 10 = 20$$

$$\boxed{RT = 20}$$

$$\begin{array}{r} 1(2) - 3 \\ 2 - 3 \\ \hline -1 = y \end{array}$$

$$\begin{array}{r} 7y - 4 = 2y + 6 \\ -2y \quad -2y \\ \hline 5y - 4 = 6 \\ +4 \quad +4 \\ \hline 5y = 10 \\ \hline y = 2 \end{array}$$

$$\begin{array}{r} 5y = 10 \\ \hline y = 2 \end{array}$$

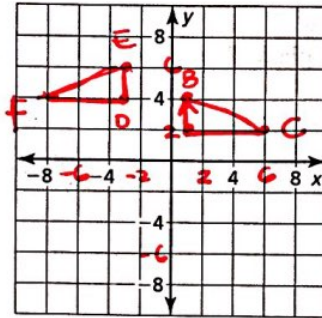
Chapter 1

Answers

11. a. Plot the points in the coordinate plane.

$A(1, 2), B(1, 4), C(6, 2)$

$D(-3, 4), E(-3, 6), F(-8, 4)$



b. Find the area of each triangle.

c. Do the triangles have the same area? Explain.

$\frac{1}{2}(2)(5) = 5$
 E
 F S D
 B
 2
 A 5 C

11. a. See left.

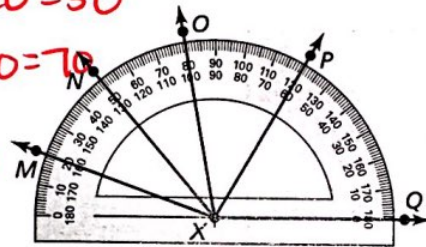
b. 5
 YES, BOTH HAVE A BASE OF 2 AND HEIGHT OF 5.

Find the angle measure. Then classify the angle.

12. $m\angle MXN$ $50 - 20 = 30$

13. $m\angle NXP$ $120 - 50 = 70$

14. $m\angle OXQ$
 $180 - 80 = 100$



12. 30, acute

13. 70, acute

14. 100, obtuse

15. 99.5

16. 82.75

17. $\angle LPM, \angle MPN, \angle LPN$

18. 52, 38

Use the diagram and the given angle measures to find the indicated angle measure.

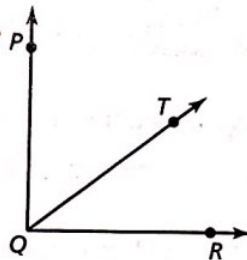
15. $m\angle PQT = 51.5^\circ$ and $m\angle TQR = 48^\circ$.

Find $m\angle PQR$. $51.5 + 48 = 99.5$

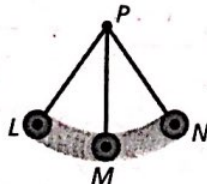
16. $m\angle PQR = 113^\circ$ and $m\angle TQR = 30.25^\circ$.

Find $m\angle PQT$.

$113 - 30.25$



17. The tip of a pendulum is in a state of rest, hanging from point P. During an experiment, a physics student sets the pendulum in motion. The tip of the pendulum swings back and forth. The tip swings from point L to point N. During each swing, the tip passes through point M. Name all the angles in the diagram.



18. Your friend is making a pattern for quilt pieces. Her pattern is a right triangle with two acute angles that are complementary. The measure of one of the acute angles is to be 12° more than half the measure of the other acute angle. Find the measure of each angle of the triangle.

$a = 52$
 $12 + \frac{1}{2}(52)$
 $12 + 26$
38

$a + 12 + \frac{1}{2}a = 90$
 $1.5a + 12 = 90$
 $1.5a = 78$
 $a = 52$