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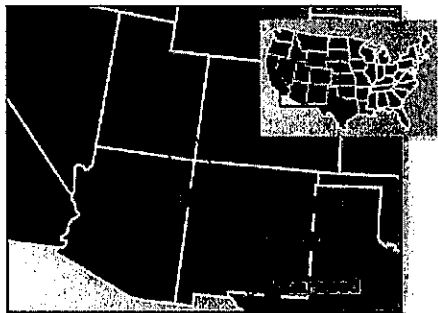
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HW #1-10

Complete the following problems (do not submit online). Check answers posted on Edlio.

1. The cities shown on the map lie approximately in a straight line. Find the distance from Albuquerque, New Mexico to Provo, Utah.



449 miles

2. Point S is between points R and T on $\overline{RT}$. Use the information to write an equation in terms of x . Then solve the equation and find RS, ST, and RT.

$$RS = 2x + 10$$

$$ST = x - 4$$

$$RT = 21$$

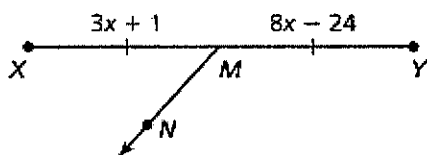
$$RS = 20$$

$$ST = 1$$

$$RT = 21$$

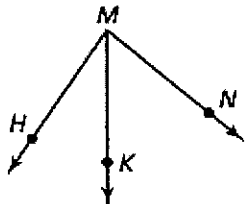
$$21 = 2x + 10 + x - 4$$

3. Identify the segment bisector of $\overline{XY}$. Then find XY.

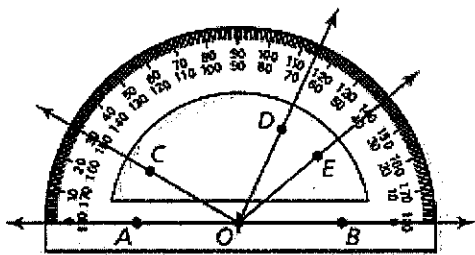
seg. bisector: $\overrightarrow{MN}$

$$XY = 32$$

4. Name three different angles in the diagram.

 $\angle HMN$ $\angle HMK$ $\angle KMN$ 

5. For each part, find the angle measure. Then classify the angle.

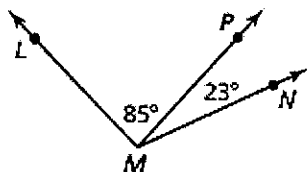


a. $m\angle AOC$ 30° , acute

b. $m\angle COB$ 150° , obtuse

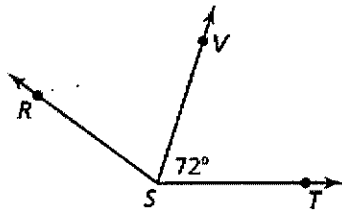
c. $m\angle EOD$ 25° , acute

6. Find $m\angle LMN$.

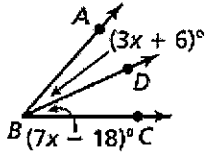


108°

7. $m\angle RST = 114^\circ$. Find $m\angle RSV$.



8. $\overrightarrow{BD}$ bisects $\angle ABC$. Find $m\angle ABD$, $m\angle CBD$, and $m\angle ABC$.

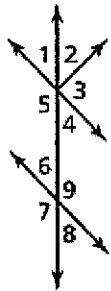


$$m\angle ABD = 24^\circ$$

$$m\angle CBD = 24^\circ$$

$$m\angle ABC = 48^\circ$$

9. Use the diagram to answer both parts.



- a. Identify the linear pair(s) that include $\angle 7$.

$$\angle 6 \text{ and } \angle 7 ; \angle 8 \text{ and } \angle 7$$

- b. Are $\angle 2$ and $\angle 5$ vertical angles? Explain your reasoning.

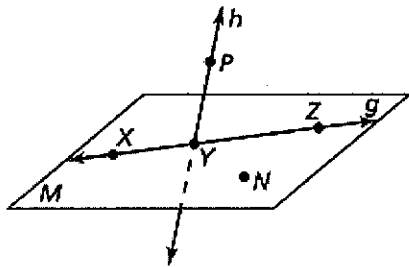
No, because

10. Write and solve an algebraic equation to find the measure of each angle: The measure of an angle is 12° more than twice the measure of its complement.

$$12 + 2x + x = 90^\circ$$

one $\angle$ is 26° and
the other $\angle$ is 64°

11. Use the diagram for the following:



- a. Given another name for plane M. plane XNZ

- b. Name a line in the plane. $\overleftrightarrow{XY}$

- c. Name a line intersecting the plane. line h

- d. Name two rays. $\overrightarrow{YP}$ and $\overrightarrow{YZ}$

- e. Name a pair of opposite rays. $\overrightarrow{YX}$ and $\overrightarrow{YZ}$

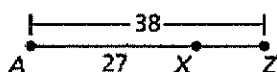
- f. Name a point NOT in plane M. P

12. Find XZ.



$$41$$

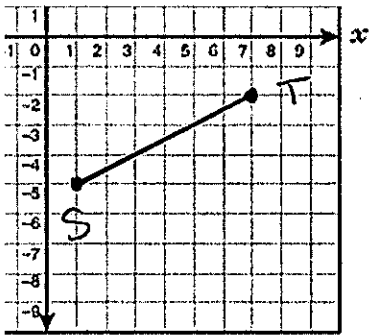
13. Find XZ.



$$11$$

14. Find the coordinates of the midpoint M of $\overline{ST}$. Then find the distance between points S and T . Leave answers in exact form (simplified completely) and rounded to two decimal places.

$S(1, -5)$ and $T(7, -2)$



$$M(4, -3.5)$$

$$ST = 3\sqrt{5}$$

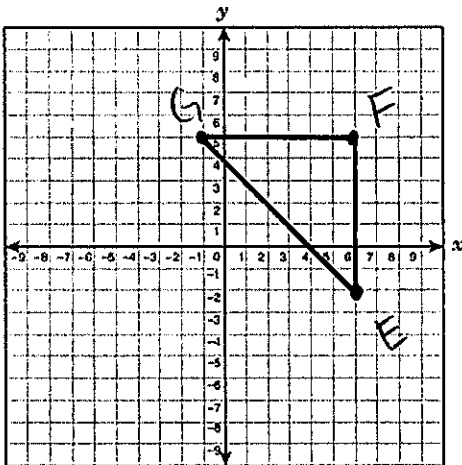
$$ST \approx 6.71$$

15. The midpoint of $\overline{JK}$ is $M(6, 3)$. One endpoint is $J(14, 9)$. Find the coordinates of endpoint K .

$$K(-2, -3)$$

16. Find the perimeter of the polygon with the given vertices. Leave answers in exact form (simplified completely) and rounded to two decimal places.

$E(6, -2)$, $F(6, 5)$, $G(-1, 5)$



$$\text{Perimeter} = 14 + 7\sqrt{2}$$

$$\approx 23.90$$

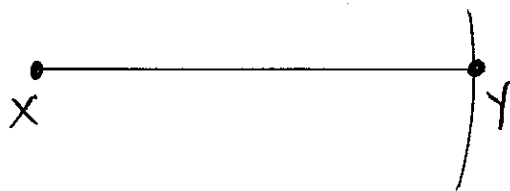
17. $\angle 1$ and $\angle 2$ are complementary angles. Given $m\angle 1 = 12^\circ$, find $m\angle 2$.

$$m\angle 2 = 78^\circ$$

18. $\angle 3$ and $\angle 4$ are supplementary angles. Given $m\angle 3 = 116^\circ$, find $m\angle 4$.

$$m\angle 4 = 64^\circ$$

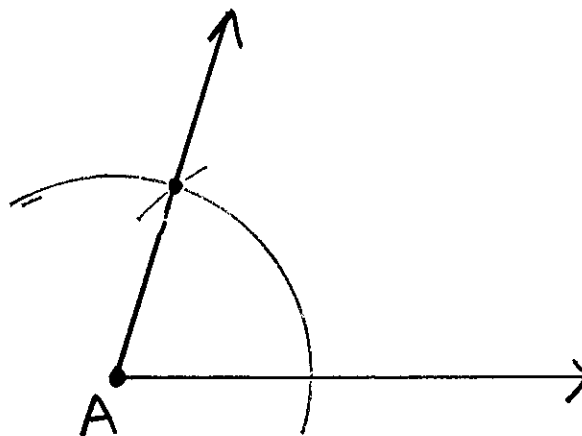
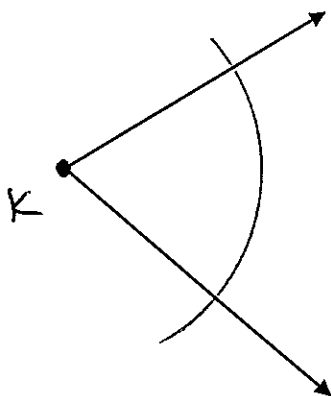
19. Construct a segment congruent to $\overline{XY}$



$$\overline{AB} \cong \overline{XY}$$



20. Construct an angle congruent to $\angle K$



$$\angle A \cong \angle K$$

21. Construct the angle bisector of $\angle Z$

