

Name \_\_\_\_\_

Period \_\_\_\_\_

Mod 1 Extra Practice

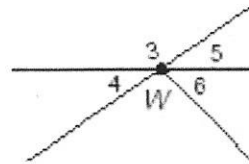
Show all your work.

1. To identify the ray beginning at  $A$  and extending through  $B$ , you would use the notation:

- (A)  $AB$       (B)  $\overline{AB}$       (C)  $\overrightarrow{AB}$       (D)  $\overleftrightarrow{AB}$

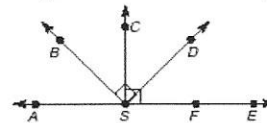
2. In the figure at right,  $\angle 3$  and  $\angle 5$  are:

- (A) congruent angles      (B) vertical angles  
 (C) a linear pair      (D) complementary angles



3. In the figure at right,  $\overrightarrow{SF}$  could also be called:

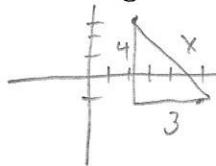
- (A)  $\overrightarrow{ES}$       (B)  $\overrightarrow{EA}$   
 (C)  $\overrightarrow{SE}$       (D) all of the above



In Problems 4-5, find the length of  $\overline{AB}$ .

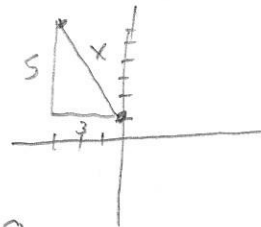
4.  $A(5,-1)$   $B(2,3)$

$$\begin{aligned} 3^2 + 4^2 &= x^2 \\ 9 + 16 &= x^2 \\ 25 &= x^2 \\ x &= 5 \end{aligned}$$



5.  $A(0,1)$   $B(-3,6)$

$$\begin{aligned} 3^2 + 5^2 &= x^2 \\ 9 + 25 &= x^2 \\ 34 &= x^2 \\ x &= \sqrt{34} = 5,8 \end{aligned}$$



In Problems 6-7, find the midpoint of  $\overline{AB}$ .

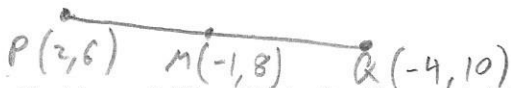
6.  $A(5,-1)$   $B(2,3)$

$$\begin{aligned} \frac{5+2}{2} &= \frac{7}{2} \\ \frac{-1+3}{2} &= \frac{2}{2} = 1 \end{aligned} \quad \left(\frac{7}{2}, 1\right)$$

7.  $A(0,1)$   $B(-3,6)$

$$\begin{aligned} \frac{0+(-3)}{2} &= -\frac{3}{2} \\ \frac{1+6}{2} &= \frac{7}{2} \end{aligned} \quad \left(-\frac{3}{2}, \frac{7}{2}\right)$$

8. Assume  $M$  is the midpoint of  $\overline{PQ}$ . If  $M(-1,8)$  and  $P(2,6)$ , find the coordinates of  $Q$ .



For Problems 9-11, refer to the figure at right.

9. Name a pair of vertical angles.

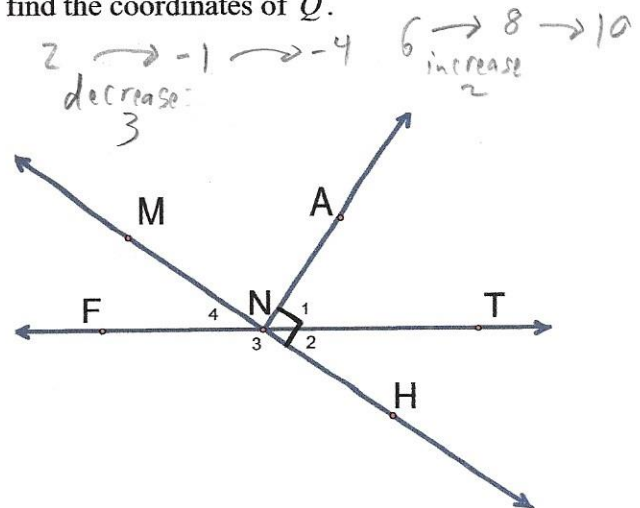
$\angle 2$  &  $\angle 4$

10. Give a name for the relationship between  $\angle 1$  and  $\angle 2$ .

complementary

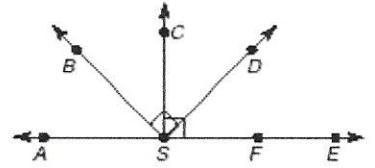
11. Give another name for  $\angle 3$ .

$\angle FNH$  or  $\angle HNF$

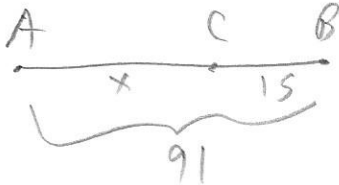


12. In the figure at right, name a point that is noncollinear with points  $A$  and  $F$ .

$B, C, \text{ or } D$



13. Assume point  $C$  is between points  $A$  and  $B$ . If  $BC = 15$  and  $AB = 91$ , find the measure of segment  $\overline{AC}$ .



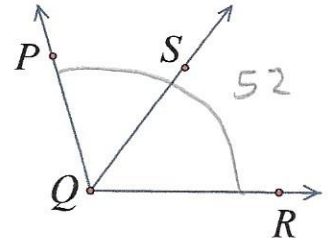
$$x + 15 = 91$$

$$x = 76$$

14. In the figure at right  $\overline{QS}$  bisects  $\angle PQR$ . If  $m\angle PQR = 52^\circ$ , find  $m\angle PQS$  and  $m\angle SQR$ .

$$m\angle PQS = \frac{52}{2} = 26$$

$$m\angle SQR = 26$$



15. In the figure at right,  $m\angle ABC = 75$ ,  $m\angle 1 = 25 - x$ , and  $m\angle 2 = 5x + 20$ . Find  $x$  and  $m\angle 2$ .

$$25 - x + 5x + 20 = 75$$

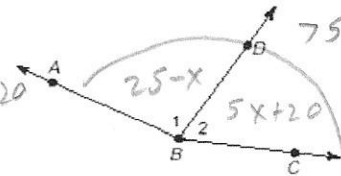
$$4x + 45 = 75$$

$$4x = 30$$

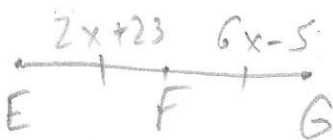
$$x = 7.5$$

$$m\angle 2 = 5(7.5) + 20$$

$$= 57.5$$



16.  $F$  is the midpoint of  $\overline{EG}$ . If  $EF = 2x + 23$  and  $FG = 6x - 5$ , find  $EG$ .



$$2x + 23 = 6x - 5$$

$$28 = 4x$$

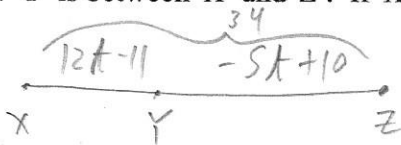
$$x = 7$$

$$EF = 2(7) + 23 = 37$$

$$FG = 6(7) - 5 = 37$$

$$EG = 37 + 37 = 74$$

17.  $Y$  is between  $X$  and  $Z$ . If  $XY = 12t - 11$ ,  $YZ = -5t + 10$ , and  $XZ = 34$ , find  $t$ .



$$12t - 11 + -5t + 10 = 34$$

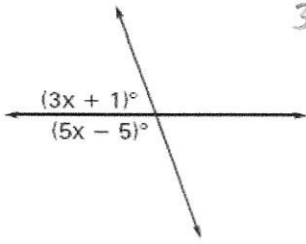
$$7t - 1 = 34$$

$$7t = 35$$

$$t = 5$$

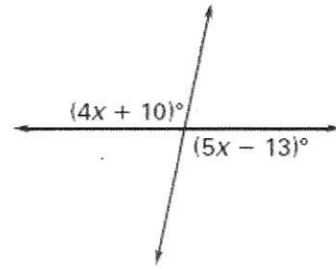
For Problems 18-20, find  $x$ .

18.



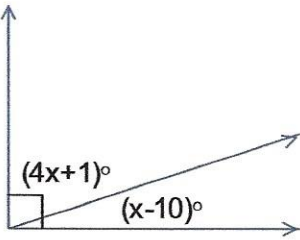
$$\begin{aligned}3x + 1 + 5x - 5 &= 180 \\8x - 4 &= 180 \\8x &= 184 \\x &= 23\end{aligned}$$

19.



$$\begin{aligned}5x - 13 &= 4x + 10 \\x &= 23\end{aligned}$$

20.



$$\begin{aligned}4x + 1 + x - 10 &= 90 \\5x - 9 &= 90 \\5x &= 99 \\x &= 49.5\end{aligned}$$