

Module 1 Review

1. Segment CD has endpoints (-2,5) and (-1,1). Find the length of segment CD. (You may leave your answer as a radical or round to the nearest tenth.)



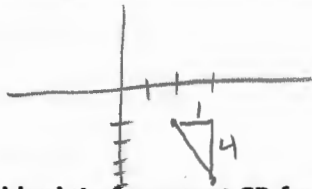
$$1^2 + 4^2 = x^2$$

$$1 + 16 = x^2$$

$$17 = x^2$$

$$x = \sqrt{17} = 4.1$$

2. Segment JK has endpoints (2,-1) and (3,-5). Find the length of segment JK. (You may leave your answer as a radical or round to the nearest tenth.)



$$1^2 + 4^2 = x^2$$

$$1 + 16 = x^2$$

$$17 = x^2$$

$$x = \sqrt{17} = 4.1$$

3. Find the midpoint of segment CD from Problem 1.

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

$$\frac{5 + 1}{2} = \frac{6}{2} = 3$$

4. Find the midpoint of segment JK from Problem 2.

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

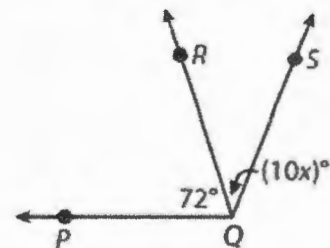
$$\frac{-1 + -5}{2} = \frac{-6}{2} = -3$$

5. Indicate whether each of the following names the angle correctly.



- | | | | |
|---|--------------|--------------------------------------|-------------------------------------|
| A | $\angle B$ | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| B | $\angle BNT$ | <input type="radio"/> Yes | <input checked="" type="radio"/> No |
| C | $\angle TBN$ | <input checked="" type="radio"/> Yes | <input type="radio"/> No |
| D | $\angle NBT$ | <input checked="" type="radio"/> Yes | <input type="radio"/> No |

6. Find the value of x , given that $m\angle PQS = 112^\circ$.



$$10x + 72 = 112$$

$$10x = 40$$

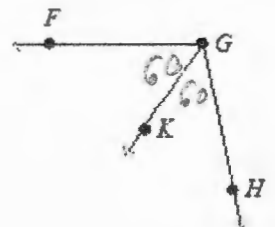
$$x = 4$$

7. \overrightarrow{GK} bisects $\angle FGH$. If $m\angle GFH = 120$ and $m\angle FGK = 3x + 6$, solve for x .

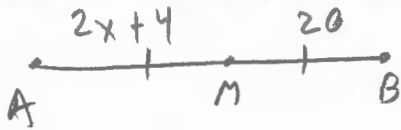
$$3x + 6 = 60$$

$$3x = 54$$

$$x = 18$$

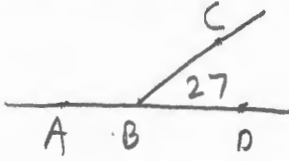


8. M is the midpoint of \overline{AB} . If $AM = 2x + 4$ and $AB = 20$, solve for x. [Draw the picture and label it correctly.]



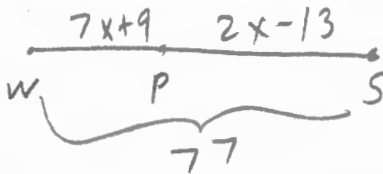
$$\begin{aligned} 2x + 4 &= 20 \\ 2x &= 16 \\ x &= 8 \end{aligned}$$

9. $\angle ABC$ and $\angle CBD$ form a linear pair. What is $m\angle ABC$ if $m\angle CBD = 27^\circ$? [Draw a picture]



$$m\angle ABC = 180 - 27 = 153$$

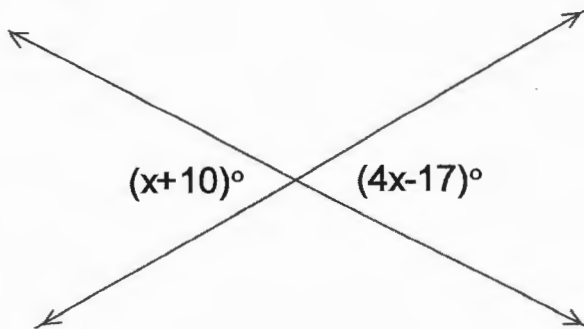
10. P is between points W and S. If $WP = 7x + 9$, $PS = 2x - 13$, and $WS = 77$, find WP. [Hint: Draw a picture.]



$$\begin{aligned} 7x + 9 + 2x - 13 &= 77 \\ 9x - 4 &= 77 \\ 9x &= 81 \\ x &= 9 \end{aligned}$$

$$WP = 7(9) + 9 = 72$$

11. Find x.



$$\begin{aligned} x + 10 &= 4x - 17 \\ 27 &= 3x \\ x &= 9 \end{aligned}$$

12. What word describes an angle whose measure is greater than 90° and less than 180° ?

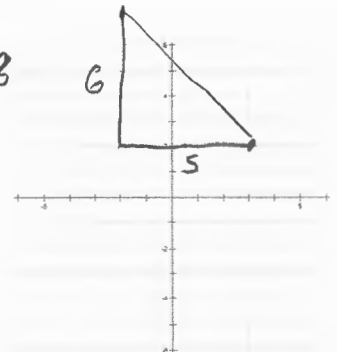
- A acute
 B obtuse
 C straight

13. \overline{XY} has endpoints at $X(-2, 7)$ and $Y(3, 1)$.

- a. Find the length of \overline{XY} .

$$\begin{aligned} 5^2 + 6^2 &= x^2 \\ 25 + 36 &= x^2 \\ 61 &= x^2 \end{aligned}$$

$$x = \sqrt{61} = 7.8$$

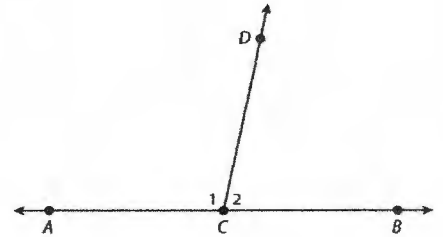


- b. Find the coordinates of the midpoint of \overline{XY} .

$$\begin{aligned} \frac{-2+3}{2} &= \frac{1}{2} & \left(\frac{1}{2}, 4\right) \\ \frac{7+1}{2} &= \frac{8}{2} = 4 \end{aligned}$$

14. In the figure at right, use the letters to give two other names for $\angle 1$.

$\angle ACD, \angle DCA$

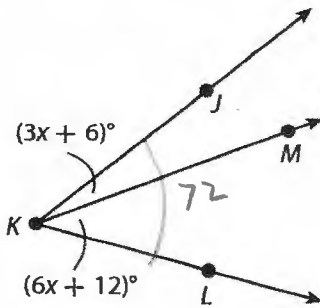


15. If $m\angle 1 = 2x$ and $m\angle 2 = x$, what is $m\angle 1$ and $m\angle 2$?

$$\begin{aligned} 2x + x &= 180 \\ 3x &= 180 \\ x &= 60 \end{aligned}$$

$$\begin{aligned} m\angle 1 &= 2(60) = 120 \\ m\angle 2 &= 60 \end{aligned}$$

16. If $m\angle JKL = 72^\circ$, find x and $m\angle JKM$



$$3x + 6 + 6x + 12 = 72$$

$$9x + 18 = 72$$

$$9x = 54$$

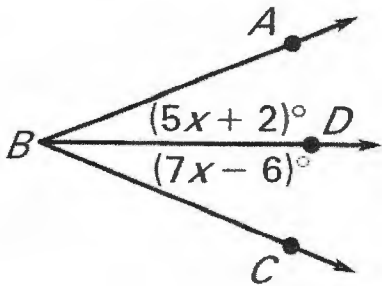
$$x = 6$$

$$x = \underline{6}$$

$$m\angle JKM = 3(6) + 6 = 24$$

$$m\angle JKM = \underline{24}$$

17. In the diagram below, ray BD bisects $\angle ABC$. Find x and $m\angle ABC$.



$$5x + 2 = 7x - 6$$

$$8 = 2x$$

$$x = 4$$

$$m\angle ABD = 5(4) + 2 = 22$$

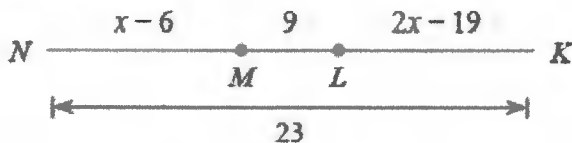
$$m\angle DBC = 7(4) - 6 = 22$$

$$m\angle ABC = 22 + 22 = 44$$

$$x = 4$$

$$m\angle ABC = 44$$

18. Find x and the length of \overline{LK} .



$$x - 6 + 9 + 2x - 19 = 23$$

$$3x - 16 = 23$$

$$3x = 39$$

$$x = 13$$

$$LK = 2(13) - 19 = 7$$

$$x = 13$$

$$LK = 7$$

19. Point M is the midpoint of \overline{PQ} . If $P(10, 4)$ and $M(18, 1)$, find the coordinates of Point Q .

