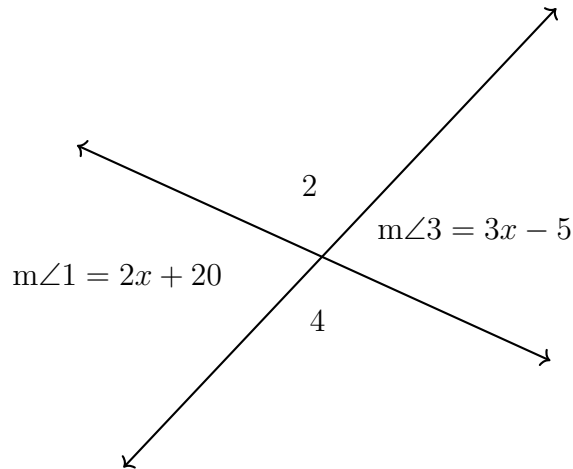


Name: _____

3.1 Homework: Mixed review

1. Two lines intersect with vertical angles $m\angle 1 = 2x + 20$ and $m\angle 3 = 3x - 5$. Find $m\angle 2$.

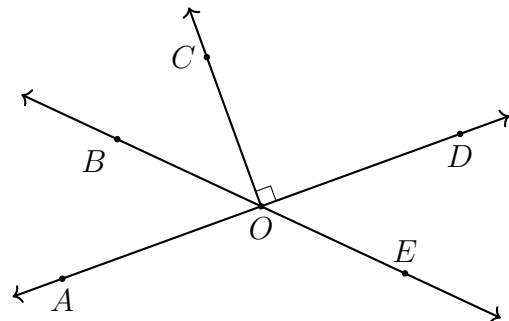


2. Write the appropriate name for the type of angle depending on its measure in degrees.
 (acute, right, obtuse, or straight)

- (a) $m\angle = 90$: _____
 (b) $90 < m\angle < 180$: _____
 (c) $0 < m\angle < 90$: _____
 (d) $m\angle = 180$: _____

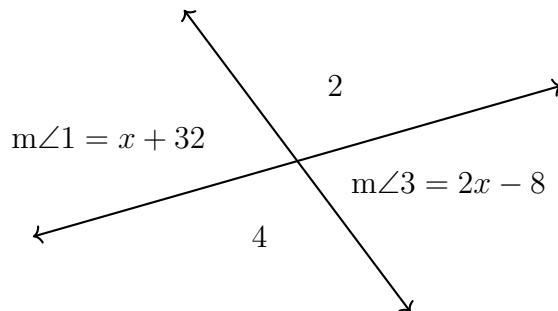
3. Identify the true statement(s) given $\angle AOB = 2x$ and $\angle BOC = 5x + 20$.

- (a) $\angle AOB \cong \angle BOC$
 $2x = (5x + 20)$
 (b) $\angle AOB, \angle BOC$ are complementary
 $2x + (5x + 20) = 90^\circ$
 (c) $\angle AOB$ and $\angle BOC$ are a linear pair
 $2x + (5x + 20) = 180^\circ$

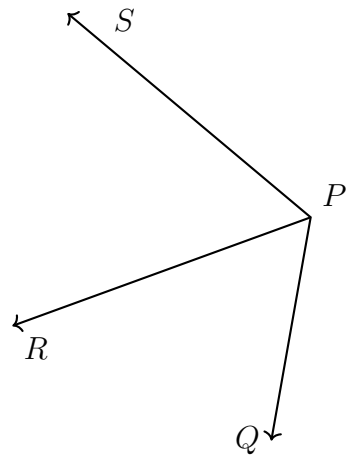


Copy the correct equation and solve for x . Check your answer.

4. As shown below, two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$. Given that $m\angle 1 = x + 32$ and $m\angle 3 = 2x - 8$, find $m\angle 1$.



5. An angle bisector is shown below, with \overrightarrow{PR} bisecting $\angle QPS$. Given $m\angle QPR = 6x - 12$ and $m\angle QPS = 10x + 4$, find $m\angle QPS$.

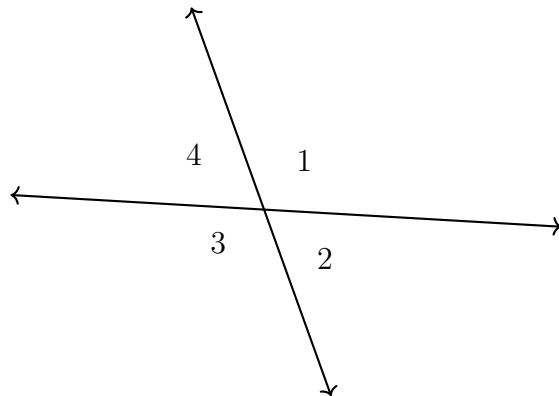


6. As shown below, two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$.

(a) Name a pair of vertical angles.

(b) Given $m\angle 4 = 70^\circ$, write down $m\angle 2$.

(c) Find $m\angle 1$.



Name:

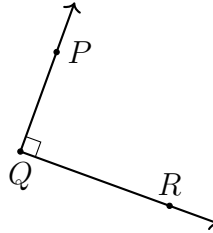
7. Demonstrate your ability to classify angles and use standard terminology.

(a) Which of the following are true with respect to the angle, $m\angle PQR$?

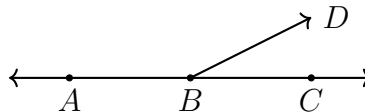
True False It is a right angle

True False It's measure is 180°

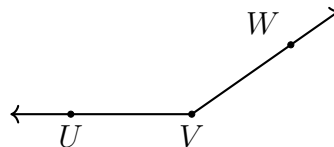
True False \overrightarrow{QP} is perpendicular to \overrightarrow{QR}



(b) What is the sum of the degree measures of this linear pair, $\angle ABD$ and $\angle CBD$?

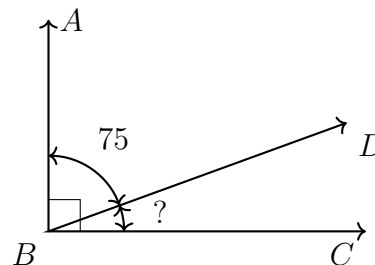


(c) The given angle $\angle UVW$ is which of the following: acute, obtuse, or right?



8. Apply the Angle Addition postulate. Write an equation to support your work.

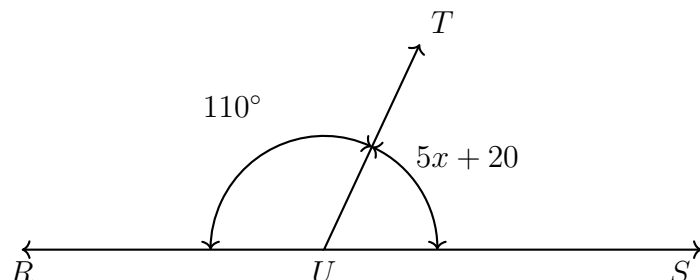
Given $m\angle ABD = 75^\circ$, $m\angle ABC = 90^\circ$.



Find $m\angle CBD$.

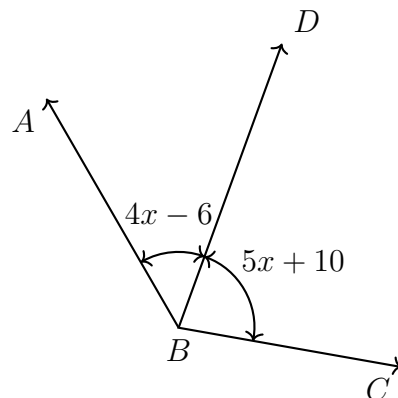
9. A linear pair is formed by two angles, $m\angle RUT = 110^\circ$ and $m\angle SUT = 5x + 20$.

Write an equation, then solve for x .



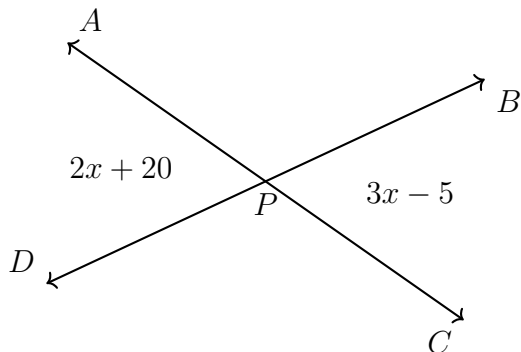
10. Given $m\angle ABD = 4x - 6$, $m\angle DBC = 5x + 10$, and $m\angle ABC = 130^\circ$, as shown.

Model the situation with an equation, then solve for x . Check your solution for full credit.



11. Given vertical angles, $m\angle APD = 3x - 5$, $m\angle BPC = 2x + 20$, as shown.

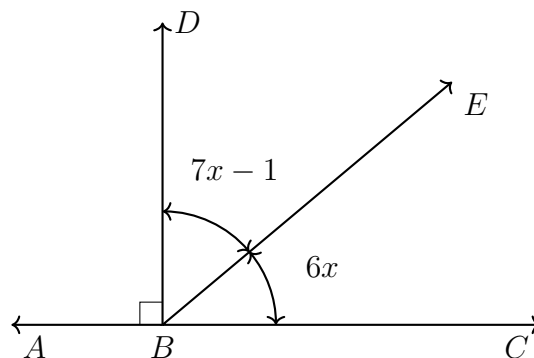
Find x . Check your solution for full credit.



12. In the diagram shown, $\overrightarrow{BD} \perp \overrightarrow{ABC}$ with angle measures marked. Find x .

Show the check for full credit.

$$m\angle DBE = 7x - 1^\circ$$

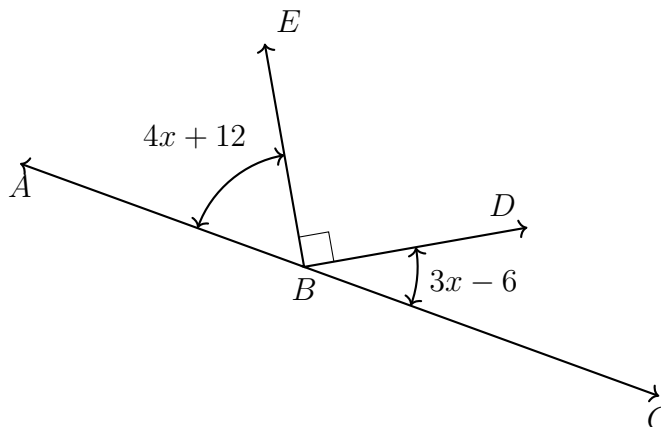


$$m\angle EBC = 6x^\circ$$

13. Given \overrightarrow{ABC} , right angle $\angle DBE$, $m\angle ABE = 4x + 12$, and $m\angle CBD = 3x - 6$.

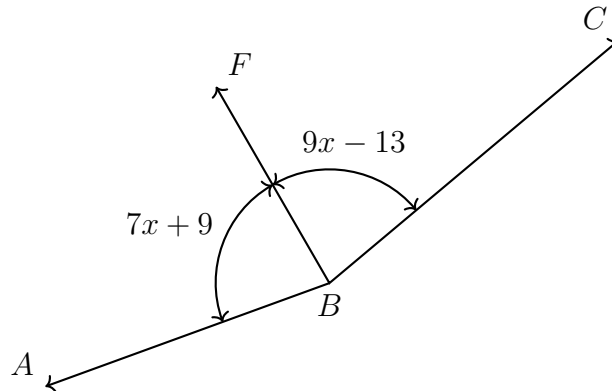
Name:

Find $m\angle CBD$.



14. Ray \overrightarrow{BF} is the angle bisector of $\angle ABC$. Given that the angle measures are $m\angle ABF = 7x + 9$ and $m\angle CBF = 9x - 13$.

Find $m\angle ABC$.



15. Ray \overrightarrow{XL} is the angle bisector of $\angle KXM$. Given $m\angle JXN = 2x + 3$.

Find x .

