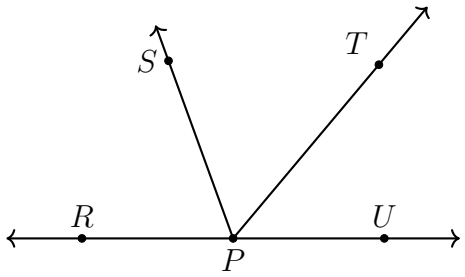
2.6 PreTest: Angle measures

1. Given the situation in the diagram, answer each question. Circle True or False.

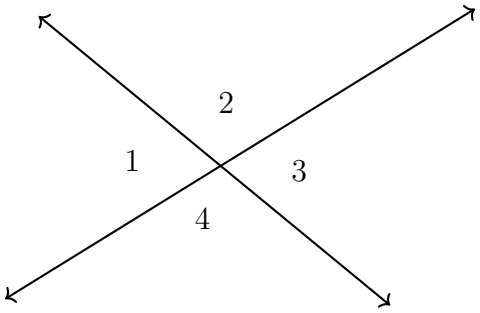
   (a) T or F: $\overrightarrow{PR}$ and $\overrightarrow{PU}$ are opposite rays.

   (b) T or F: $\angle TPR$ is an obtuse angle.

   (c) T or F: $\angle RPS$ and $\angle TPU$ are adjacent angles.



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



   (a) Given that $m\angle 1 = 75°$, find $m\angle 2 =$ _____

   (b) Find $m\angle 3 =$ _____

   (c) True or false, $\angle 1$ and $\angle 4$ are supplementary angles. _____

   (d) Which angle is opposite $\angle 1$? _____

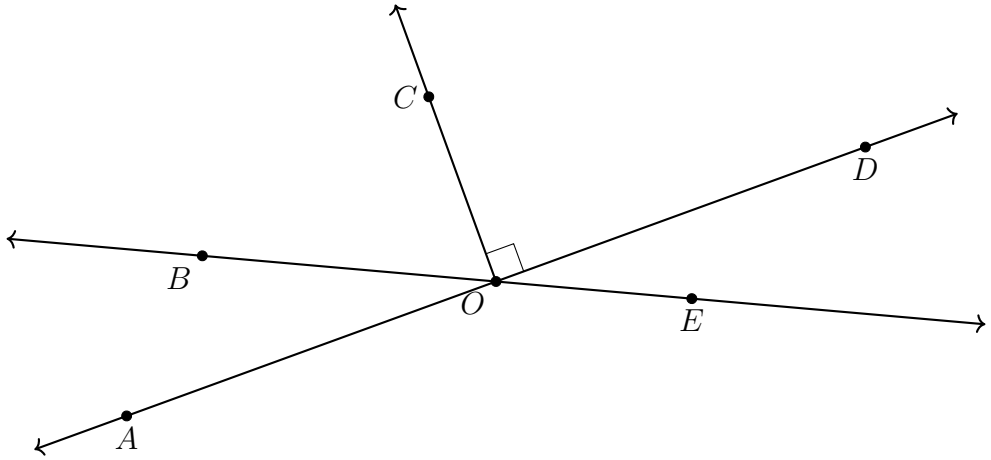
   (e) Name an angle that is adjacent to $\angle 4$. _____

   (f) True or false, $\angle 2$ and $\angle 4$ are vertical angles. _____

3. (a) Given, the diagram below. Name a right angle: _____

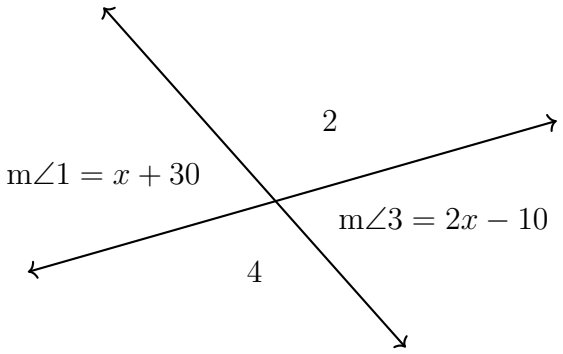
   (b) Name the angle that is opposite to $\angle AOB$: _____

   (c) Name an angle that is supplementary to $\angle COB$: _____

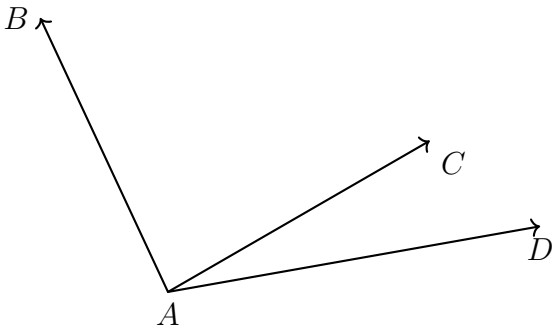


For full credit on these three problems, start with an equation and check your solution.

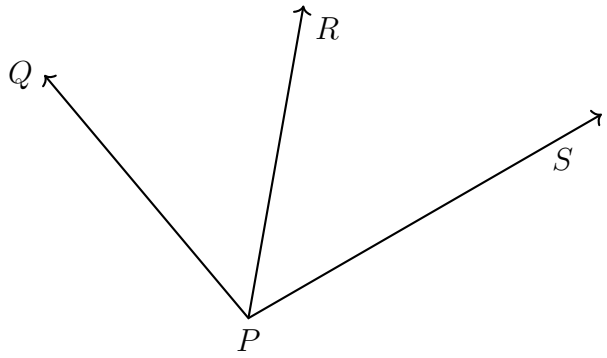
4. As shown below, two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$. Given that $\text{m}\angle 1 = x + 30$ and $\text{m}\angle 3 = 2x - 10$, find $\text{m}\angle 1$.



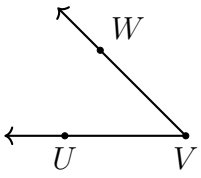
5. Given $\text{m}\angle BAC = 5x - 5$ and $\text{m}\angle DAC = x$, $\text{m}\angle BAD = 115°$. Find $\text{m}\angle BAC$.



6. An angle bisector is shown below, with $\overrightarrow{PR}$ bisecting $\angle QPS$. Given $\text{m}\angle QPR = 4x + 2$ and $\text{m}\angle QPS = 10x - 20$, find $\text{m}\angle QPS$.



7. The given angle $\angle UVW$ is which of the following: acute, obtuse, or right?

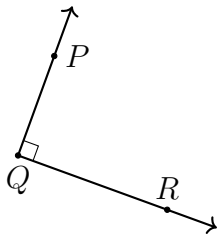


8. Which of the following are true with respect to the angle, $\text{m}\angle PQR$?

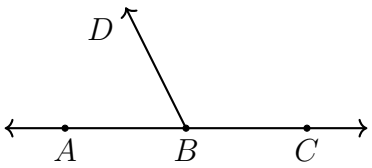
   True False It is an acute angle

   True False It's measure is 90°

   True False $\overrightarrow{QP} \perp \overrightarrow{QR}$



9. What is sum of the degree measures of this linear pair, $\angle ABD$ and $\angle CBD$?



10. 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 $\text{m}\angle 3 = 80°$, write down $\text{m}\angle 1$.

    (c) Find $\text{m}\angle 4$.

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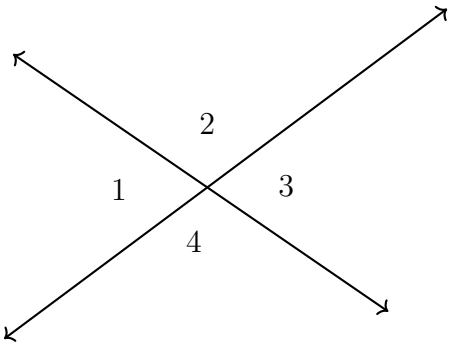
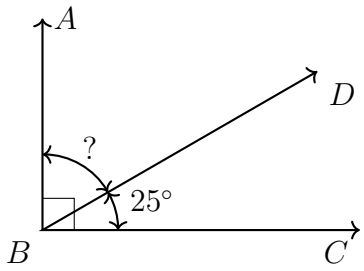


11. Apply the Angle Addition postulate. Write and equation to support your work.

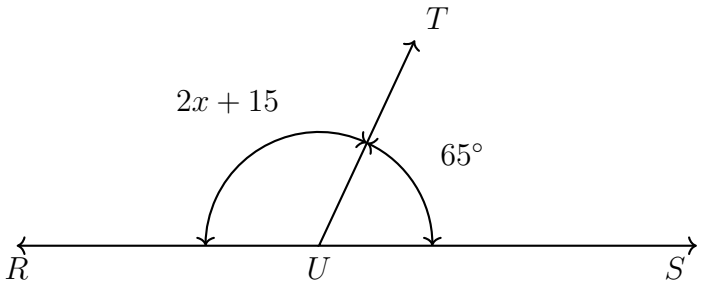
    Given m$\angle CBD = 25°$, m$\angle ABC = 90°$.

    Find $m\angle ABD$.



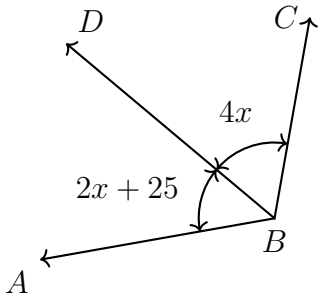
12. A linear pair is formed by two angles, m$\angle RUT = 2x + 15$ and m$\angle SUT = 65°$.

    Write an equation, then solve for x.



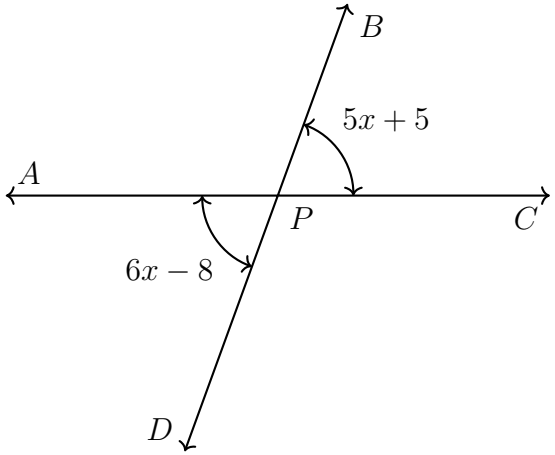
13. Given m$\angle ABD = 2x + 25$, m$\angle DBC = 4x$, and $m\angle ABC = 115°$, as shown.

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



14. Given vertical angles, $\text{m}\angle APD = 6x - 8$, $\text{m}\angle BPC = 5x + 5$, as shown.

    Find x. Check your solution for full credit.

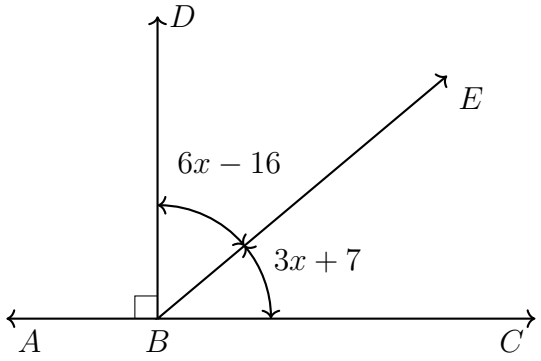


15. In the diagram shown, $\overrightarrow{BD} \perp \overleftrightarrow{ABC}$ with angle measures marked. Find x.

    Show the check for full credit.

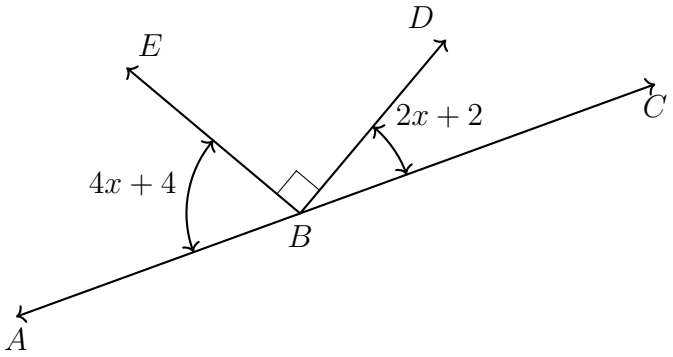
    $\text{m}\angle DBE = 6x - 16°$

    $\text{m}\angle EBC = 3x + 7°$



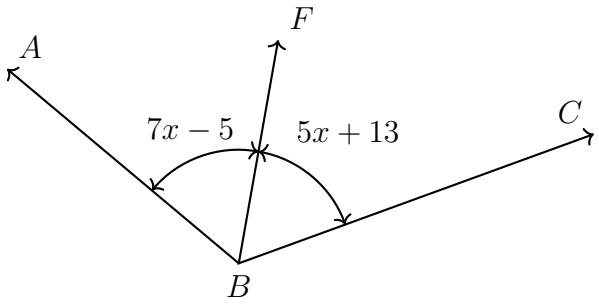
16. Given $\overleftrightarrow{ABC}$, right angle $\angle DBE$, $\text{m}\angle ABE = 4x + 4$, and $\text{m}\angle CBD = 2x + 2$.

    Find $\text{m}\angle CBD$.



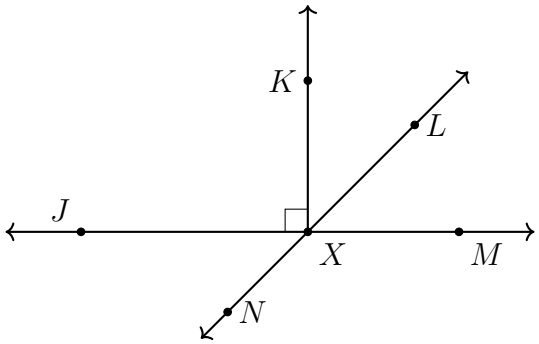
17. Ray $\overrightarrow{BF}$ is the angle bisector of $\angle ABC$. Given that the angle measures are $\text{m}\angle ABF = 7x - 5$ and $\text{m}\angle CBF = 5x + 13$.

    Find $\text{m}\angle ABC$.

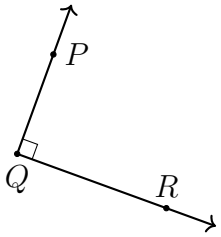


18. Ray $\overrightarrow{XL}$ is the angle bisector of $\angle KXM$. Given $\text{m}\angle JXN = 4x - 23$.

    Find $\text{m}\angle KXL$.

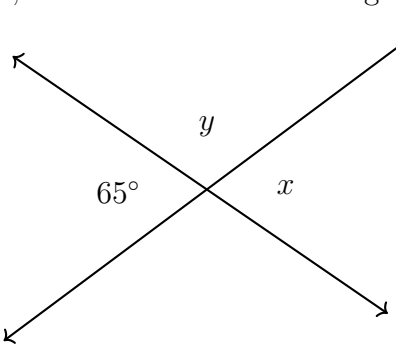


Write the equation to model each situation. "Do NOT Solve" the equation.



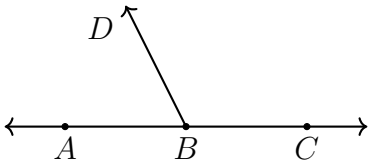
19. Write down an equation stating the value of the given angle.

20. As shown below, two lines intersect making four angles. Write two equations, one for x



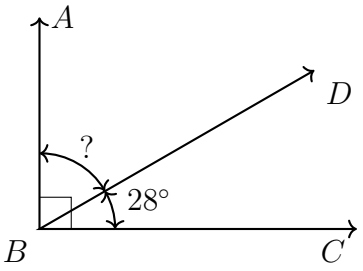
and one for y.

21. Write down an equation expressing the sum of the degree measures of this linear pair, $\angle ABD$ and $\angle CBD$.



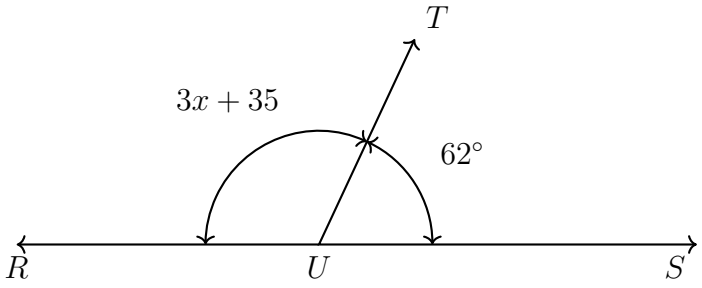
22. Apply the Angle Addition postulate. Given $\text{m}\angle CBD = 28°$, $\text{m}\angle ABC = 90°$.

Write an equation to represent the situation
(do not solve)



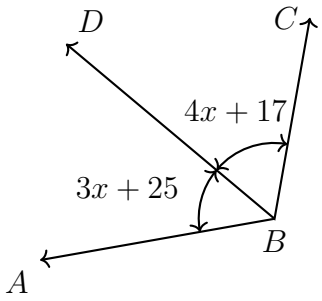
23. A linear pair is formed by two angles, $\text{m}\angle RUT = 3x + 35$ and $\text{m}\angle SUT = 62°$.

Write an equation. *Do not* solve for x.



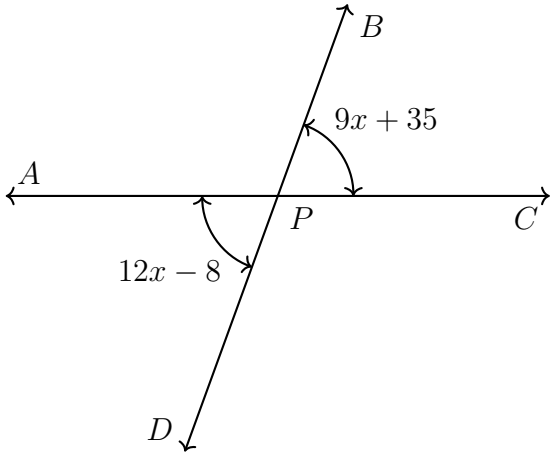
24. Given m$\angle ABD = 3x + 25$, m$\angle DBC = 4x + 17$, and $m\angle ABC = 119°$, as shown.

    Model the situation with an equation, but do not solve for x.



25. Given vertical angles, m$\angle APD = 12x - 8$, m$\angle BPC = 9x + 35$, as shown.

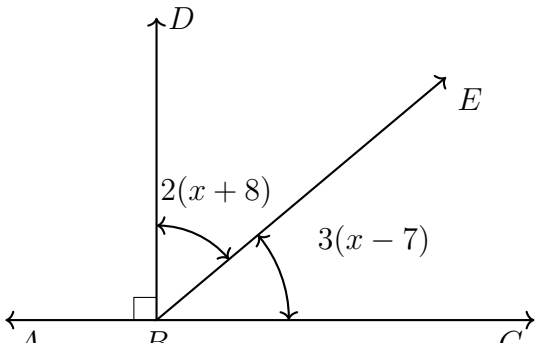
    Write an equation that could be used to solve for x.



26. In the diagram shown, $\overrightarrow{BD} \perp \overleftrightarrow{ABC}$ with angle measures marked. Write an equation modeling the situation. (do not solve)

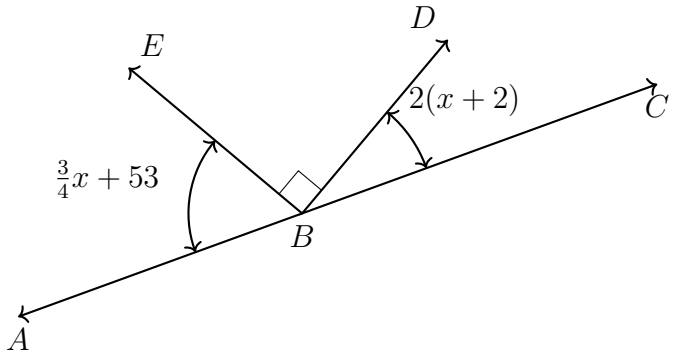
    m$\angle DBE = 2(x + 8)°$

    m$\angle EBC = 3(x - 7)°$



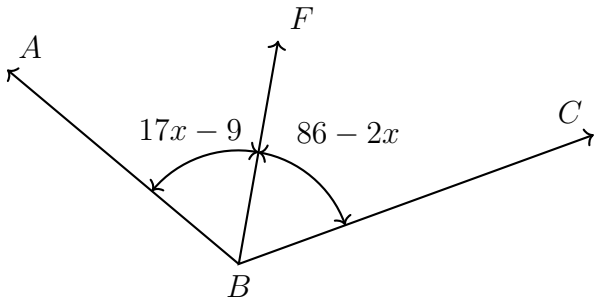
27. What equation could be used to solve for x?

    Given $\overleftrightarrow{ABC}$, right angle $\angle DBE$, $\text{m}\angle ABE = \frac{3}{4}x + 53$, and $\text{m}\angle CBD = 2(x+2)$.



28. Ray $\overrightarrow{BF}$ is the angle bisector of $\angle ABC$. Given that the angle measures are $\text{m}\angle ABF = 17x - 9$ and $\text{m}\angle CBF = 86 - 2x$.

    Write an equation in terms of x to model the situation.



29. Ray $\overrightarrow{XL}$ is the angle bisector of $\angle KXM$. Given $\text{m}\angle MXN = 14x - 19$.

    Write an equation that could be solved for the value of x in the diagram.