2.5 Homework: Angle terminology and angle addition

1. Use standard notation to represent an angle, the angle symbol followed by three letters, $\angle ABC$.

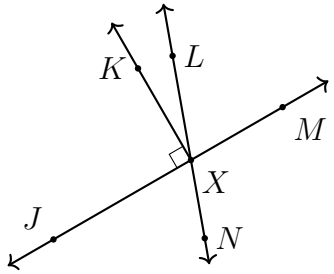
   (a) Name a right angle: _____

   (b) Name the angle vertical to $\angle LXM$: _____

   (c) Name the ray opposite to $\overrightarrow{XJ}$: _____

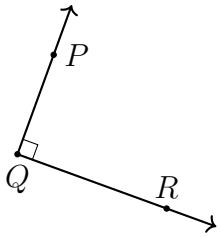
   (d) What is the measure of $\angle KXM$? _____

   (e) Are $\angle JXL$ and $\angle LXM$ complementary, supplementary, or neither?

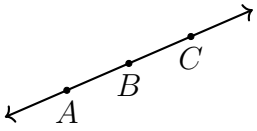


2. The size of an angle is its "measure," which can be from $0°$ to $360°$

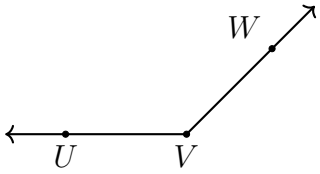
   (a) What is the degree measure of the angle, m$\angle PQR$?



   (b) What is the degree measure made by these two opposite rays, $\overrightarrow{BA}$ and $\overrightarrow{BC}$?



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

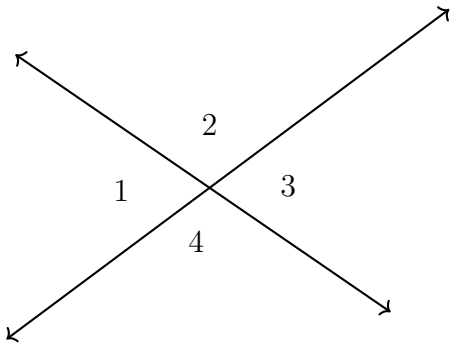


3. As shown below, two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$.

   Given $\text{m}\angle 2 = 120°$.

   (a) Find $\text{m}\angle 3$

   (b) Find $\text{m}\angle 4$

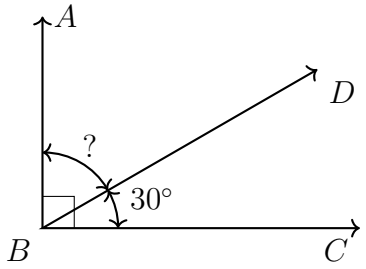


Angle addition situations

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

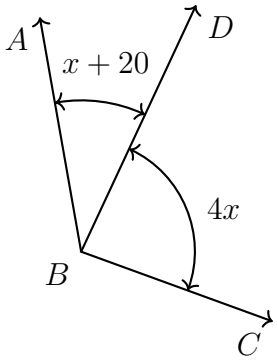
   Given $\text{m}\angle CBD = 30°$, $\text{m}\angle ABC = 90°$.

   Find $m\angle ABD$.



5. Given $\text{m}\angle ABD = x + 20$, $\text{m}\angle DBC = 4x$, and $m\angle ABC = 120°$, as shown.

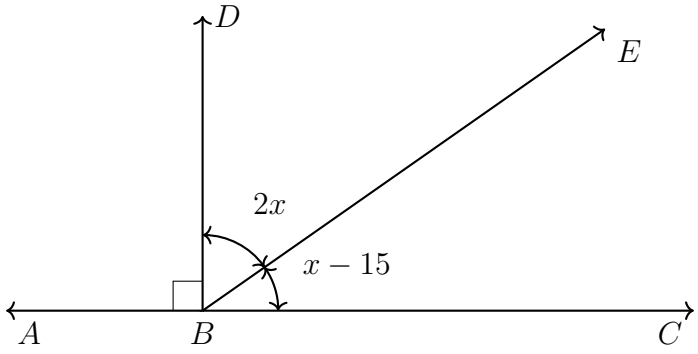
   Write an equation and solve for x.



   Show your check for full credit.

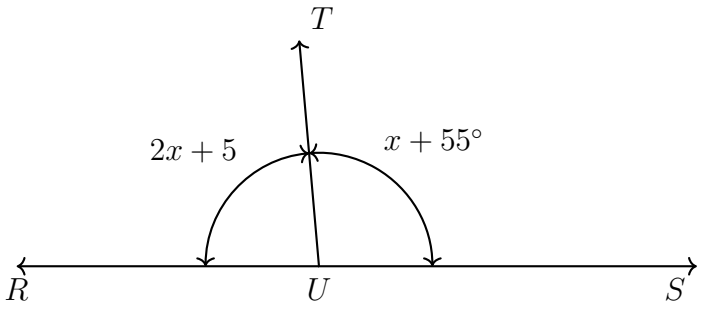
6. Given $\overrightarrow{BD} \perp \overleftrightarrow{ABC}$, m$\angle DBE = 2x$, and m$\angle EBC = x - 15°$, as shown below.

   Write an equation and solve for x.



7. A linear pair is formed by two angles, m$\angle RUT = 2x + 5$ and m$\angle SUT = x + 55°$.

   Write an equation, then solve for x.

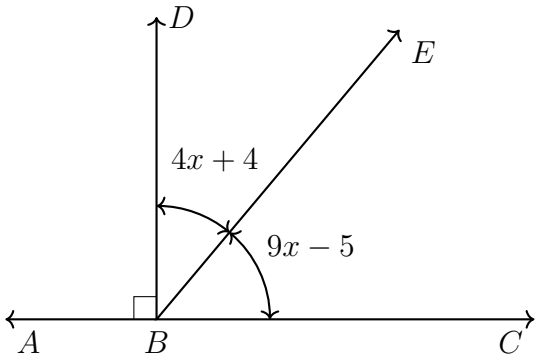


8. In the diagram shown, $\overrightarrow{BD} \perp \overleftrightarrow{ABC}$ and angle measures are given.

   Find x. Show the check for full credit.

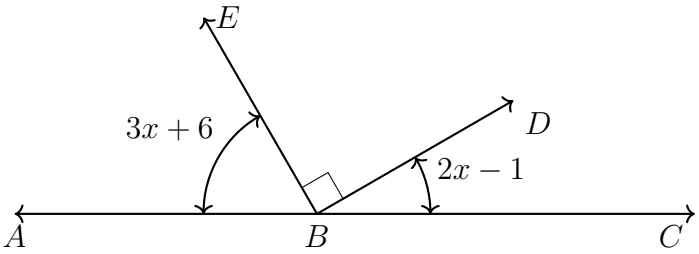
   m$\angle DBE = 4x + 4°$

   m$\angle EBC = 9x - 5°$



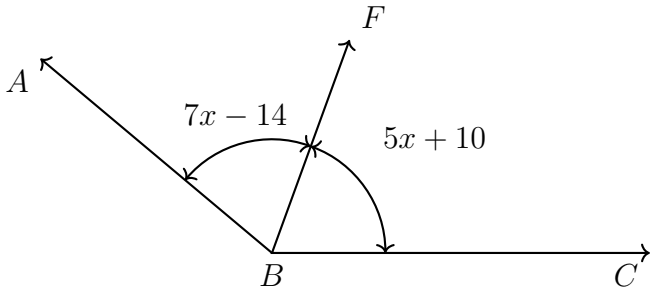
9. Given $\overleftrightarrow{ABC}$, right angle $\angle DBE$, $\text{m}\angle ABE = 3x + 6$, and $\text{m}\angle DBC = 2x - 1$.

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



10. Ray $\overrightarrow{BF}$ is the angle bisector of $\angle ABC$. Given that the angle measures are $\text{m}\angle ABF = 7x - 14$ and $\text{m}\angle CBF = 5x + 10$.

    Find x.



11. Find the height of the $\triangle RST$, having an area of $A = 117$ and base $RS = 9$.

    Start by substituting values in the area formula:

    $$A = \frac{1}{2}bh = 117$$