2.5 Homework: Angle terminology and angle addition

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

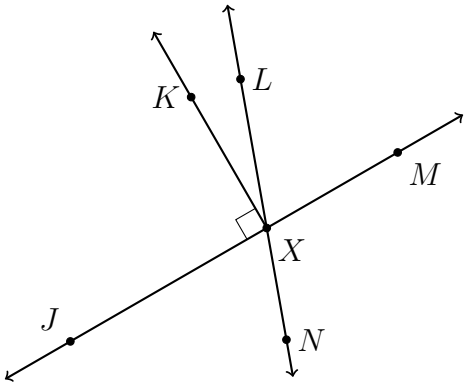
   (a) Name a right angle: _____

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

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

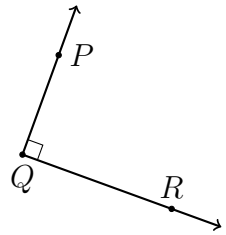
   (d) What is the measure of $\angle KXM$? _____

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

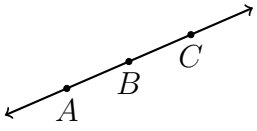


2. The size of an angle is its "measure," which can be from 0° to 360°

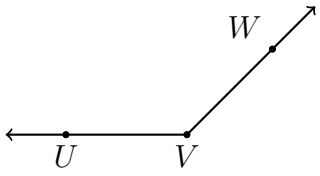
   (a) What is the degree measure of the angle, $m\angle PQR$?



   (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?

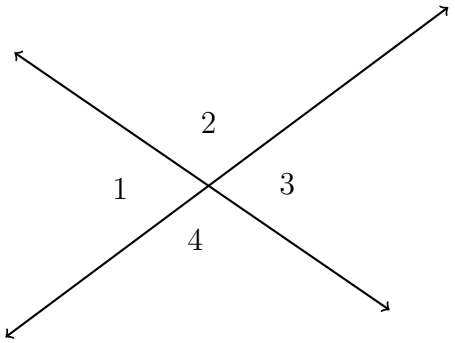


3. As shown below, two lines intersect making four angles: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$.

   Given $m\angle 2 = 120°$.

   (a) Find $m\angle 3$

   (b) Find $m\angle 4$

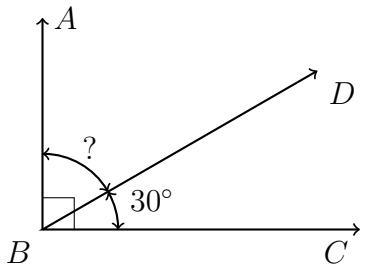


Angle addition situations

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

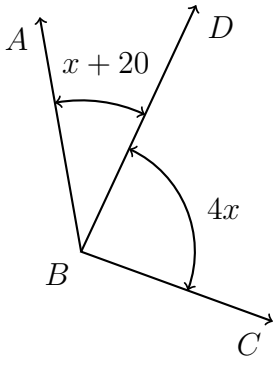
   Given $m\angle CBD = 30°$, $m\angle ABC = 90°$.

   Find $m\angle ABD$.



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

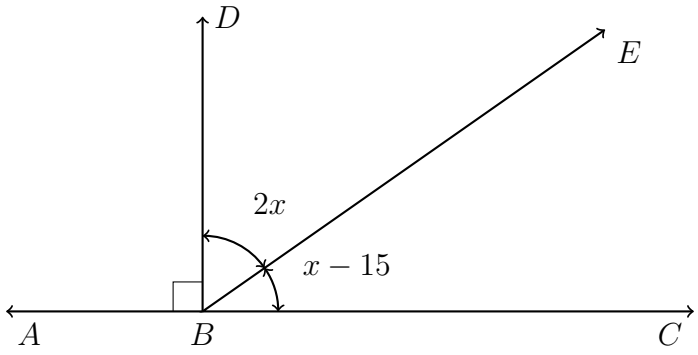
   Write an equation and solve for x.



   Show your check for full credit.

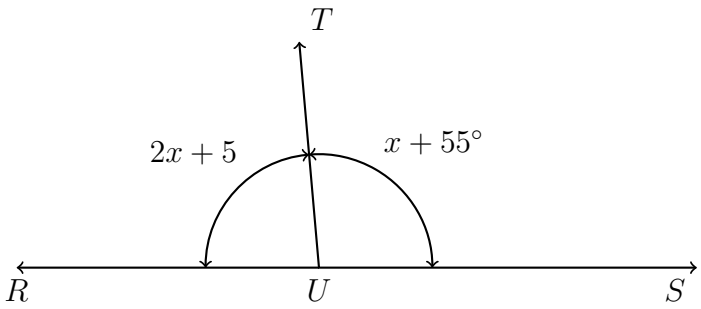
6. Given $\overrightarrow{BD} \perp \overleftrightarrow{ABC}$, $m\angle DBE = 2x$, and $m\angle EBC = x - 15°$, as shown below.

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.

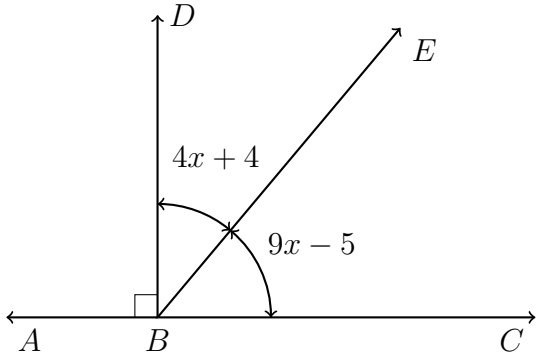


8. In the diagram shown, $\overrightarrow{BD} \perp \overleftrightarrow{ABC}$ and angle measures are given.

   Find x. Show the check for full credit.

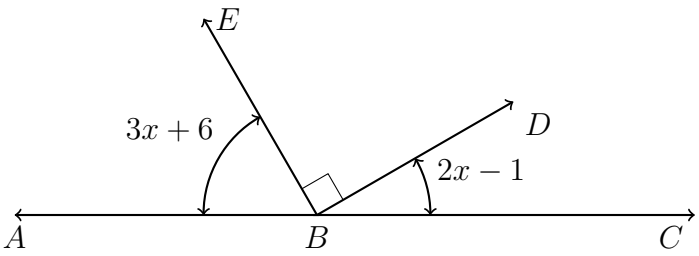
   $m\angle DBE = 4x + 4°$

   $m\angle EBC = 9x - 5°$



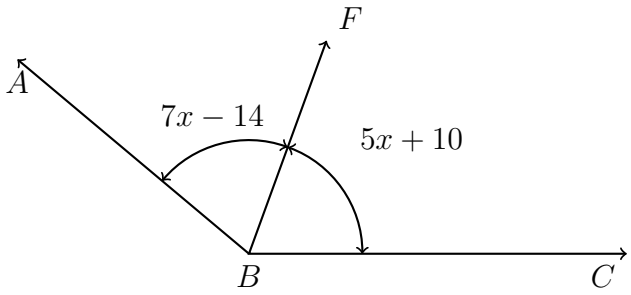
9. Spicy: Given $\overleftrightarrow{ABC}$, right angle $\angle DBE$, $m\angle ABE = 3x + 6$, and $m\angle DBC = 2x - 1$.

   Find $m\angle ABE$.



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

    Find x.



11. Spicy: Given $\overline{PQRS}$. Q is the midpoint of $\overline{PS}$, and R bisects $\overline{QS}$.

    If $PR = 4\frac{1}{2}$ find PS. Justify your answer.

12. Spicy: Given $A(0)$ and $T(2)$, as shown on the number line. T is one of the points that trisects $\overline{AB}$.

    Find B. For full credit, find both solutions.