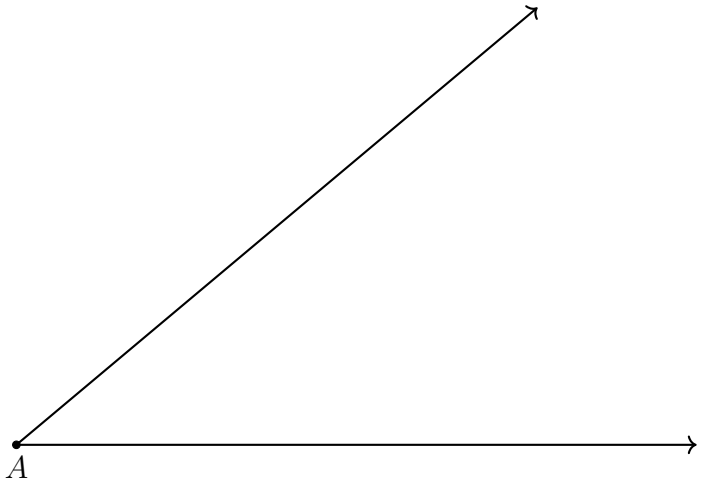
2.4 Classwork: Angle bisector

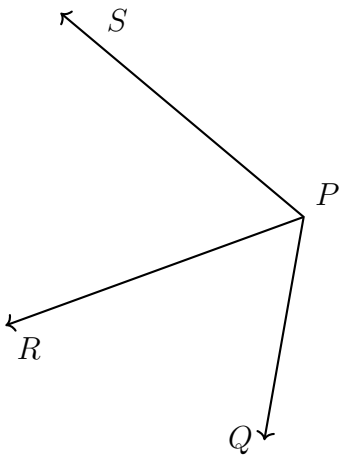
1. Given an angle with vertex A.
   (a) Using a protractor, measure angle A in degrees. $\text{m}\angle A =$

   (b) Draw a ray $\overrightarrow{AB}$ that exactly bisects $\angle A$.

   (c) What is the measure of each half angle?



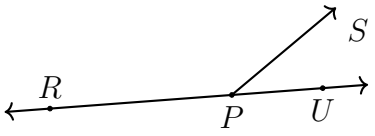
2. An angle bisector is shown below, with $\overrightarrow{PR}$ bisecting $\angle QPS$. Given $\text{m}\angle QPR = 3x - 12$ and $\text{m}\angle QPS = 5x + 4$, find $\text{m}\angle QPS$.



3. **Do Not Solve**. Circle the appropriate equation. Cite a justification on the line.

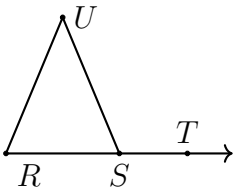
- "definition of bisector"
- "linear pairs sum to 180°"
- "vertical ∠s are ≅"
- "isosceles base angle theorem"
- "⊥ rays with complementary ∠s adding to 90°"

(a) $\overleftrightarrow{RPU}$ with ray $\overrightarrow{PS}$.



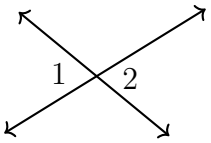
$\angle RPS \cong \angle SPU \quad m\angle RPS + m\angle SPU = 180°$ _____

(b) Given $\text{m}\angle R = m\angle U = 65$, and $\text{m}\angle UST = 130$. Find $\text{m}\angle RSU$.



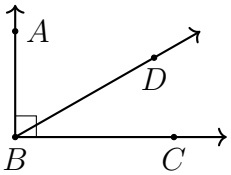
$\angle UST \cong \angle RSU \qquad \text{m}\angle UST + \text{m}\angle RSU = 180$ _____

(c) Given $m\angle 1 = 4x + 6$, $m\angle 2 = 6x - 32$. Find $m\angle 1$.



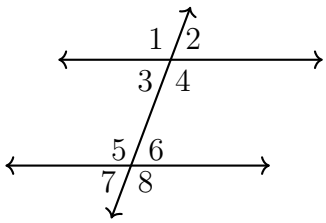
$\angle 1 \cong \angle 2 \qquad \text{m}\angle 1 + \text{m}\angle 2 = 180$ _____

(d) Given $\overrightarrow{BA} \perp \overrightarrow{BC}$, $m\angle ABD = 2x - 5$, and $m\angle DBC = x - 10$.



$\angle ABD \cong \angle DBC \qquad \text{m}\angle ABD + \text{m}\angle DBC = 90$ _____

- "alternate interior $\angle$s are $\cong$"
- "corresponding $\angle$s of $\parallel$ lines are $\cong$"
- "same-side interior $\angle$s are supplementary"



4. Given two parallel lines and a transversal, as shown.

$\angle 4 \cong \angle 5$ $\quad$ $m\angle 3 + m\angle 6 = 180$ $\quad$ _____