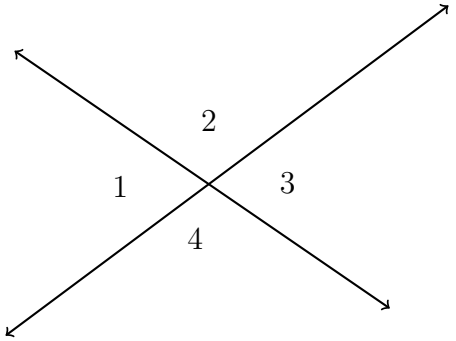
2.4 Homework: Modeling with algebra, "Do Not Solve!"

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



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

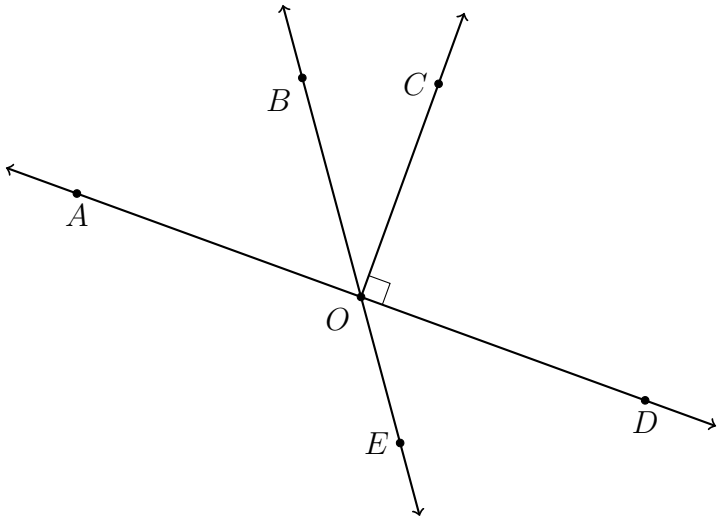
   (b) Name an angle that is adjacent to $\angle 4$. _____

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

2. Answer based on the diagram below.

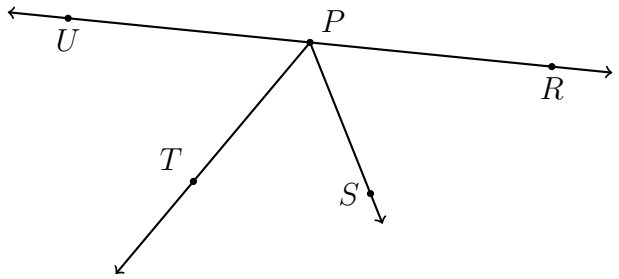
   (a) Name an angle that is supplementary to $\angle AOB$: _____

   (b) Name an angle that is complementary to $\angle DOE$: _____



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

2



(a) True or False: $\overrightarrow{RP}$ and $\overrightarrow{UP}$ are opposite rays.

(b) True or False: $\angle TPR$ is supplementary to $\angle TPU$.

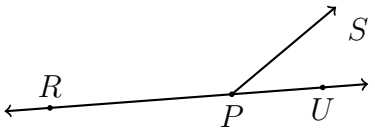
(c) True or False: $\angle RPS$ and $\angle TPS$ are complementary angles.

(d) True or False: $\angle RPS$ and $\angle TPU$ are vertical angles.

4. Do Not Solve. Circle the appropriate equation, cite a justification:

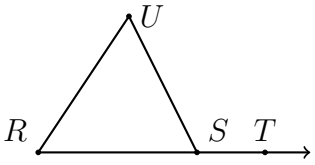
   - "definition of bisector"
   - "linear pairs sum to 180°"
   - "vertical ∠s are ≅"
   - "alternate interior ∠s are ≅"
   - "corresponding ∠s of ∥ lines are ≅"
   - "same-side interior ∠s are supplementary"
   - "⊥ rays with complementary ∠s adding to 90°"

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



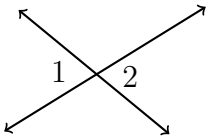
$\angle RPS \cong \angle SPU$ $m\angle RPS + m\angle SPU = 180°$ _____

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



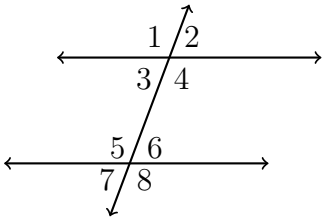
$\angle UST \cong \angle RSU$ $m\angle UST + m\angle RSU = 180$ _____

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



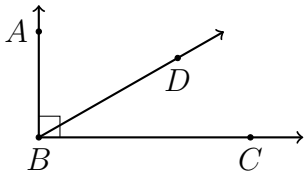
$\angle 1 \cong \angle 2$ $m\angle 1 + m\angle 2 = 180$ _____

(d) Given two parallel lines and a transversal, as shown.



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

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



$\angle ABD \cong \angle DBC$ $m\angle ABD + m\angle DBC = 90$ _____