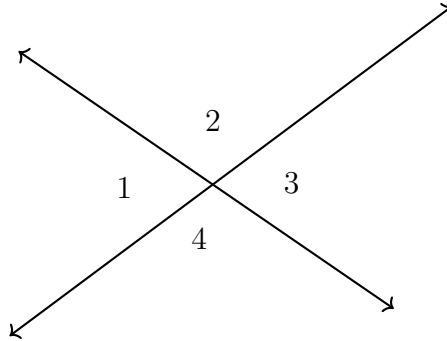


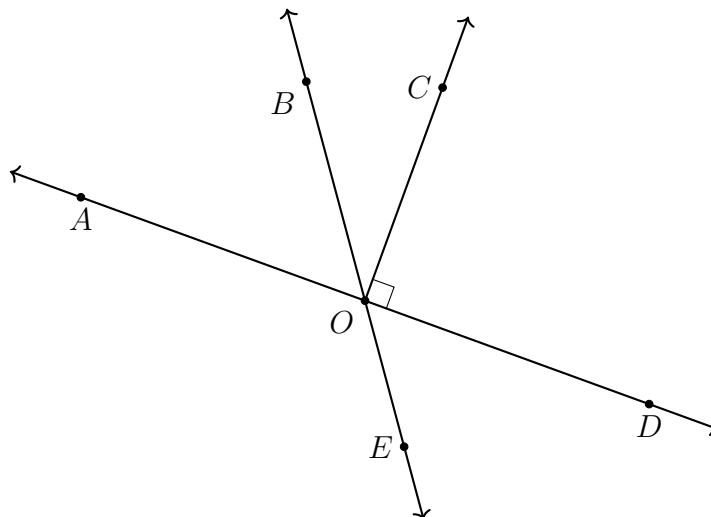
Name: \_\_\_\_\_

## 2.4 Homework: Modeling with algebra, “Do Not Solve!”

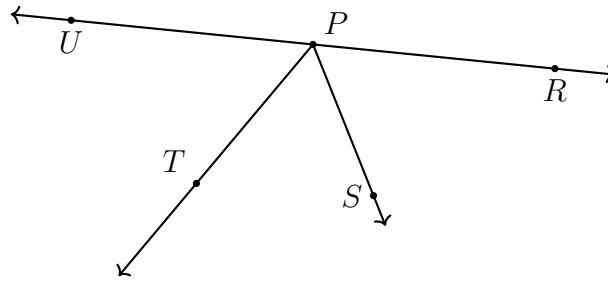
1. Do Now: As shown below, two lines intersect making four angles:  $\angle 1$ ,  $\angle 2$ ,  $\angle 3$ , and  $\angle 4$ .



- (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.



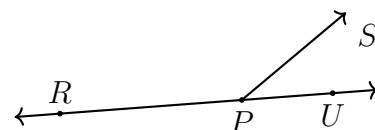
- (a) True or False:  $\overrightarrow{RP}$  and  $\overrightarrow{UP}$  are opposite rays.
- (b) True or False:  $\angle TPR$  is supplementary to  $\angle TPU$ .
- (c) True or False:  $\angle RPS$  and  $\angle TPS$  are complementary angles.
- (d) True or False:  $\angle RPS$  and  $\angle TPU$  are vertical angles.

Name: \_\_\_\_\_

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

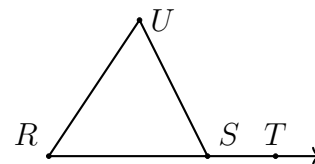
- “definition of bisector”
- “linear pairs sum to  $180^\circ$ ”
- “vertical  $\angle$ s are  $\cong$ ”
- “alternate interior  $\angle$ s are  $\cong$ ”
- “corresponding  $\angle$ s of  $\parallel$  lines are  $\cong$ ”
- “same-side interior  $\angle$ s are supplementary”
- “ $\perp$  rays with complementary  $\angle$ s adding to  $90^\circ$ ”

(a)  $\overleftrightarrow{RP\bar{U}}$  with ray  $\overrightarrow{PS}$ .



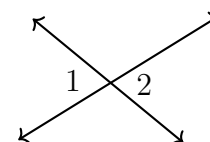
$\angle RPS \cong \angle SPU$      $m\angle RPS + m\angle SPU = 180^\circ$     \_\_\_\_\_

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



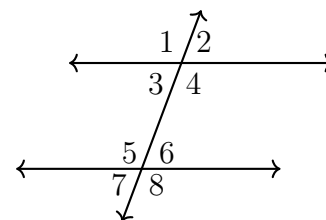
$\angle UST \cong \angle RSU$      $m\angle UST + m\angle RSU = 180$     \_\_\_\_\_

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



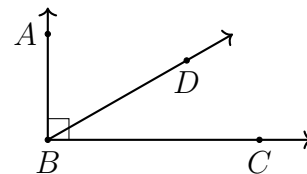
$\angle 1 \cong \angle 2$      $m\angle 1 + m\angle 2 = 180$     \_\_\_\_\_

(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  $m\angle DBC = x - 10$ .



$$\angle ABD \cong \angle DBC \quad m\angle ABD + m\angle DBC = 90 \quad \underline{\hspace{2cm}}$$