

$\angle 2 = 2x + 9$

$\angle SUT = 7x - 6$

$\angle 1 + \angle 2 = \angle SUT$

$\angle 1 = \angle 2$

$\frac{24}{3} = \frac{3x}{3}$

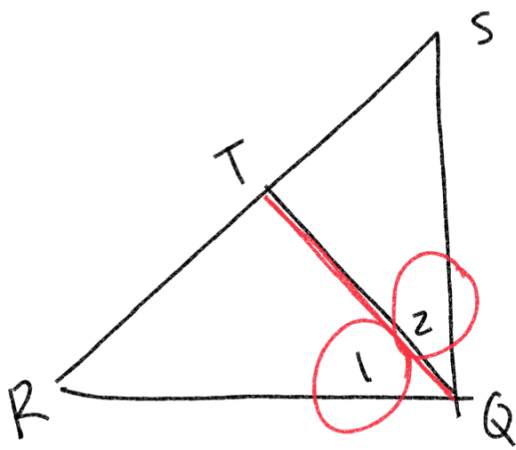
$x = 8$

$\angle 2$ $\angle SUT$

$2(\angle 2) = \angle SUT$

$2(2x + 9) = 7x - 6$

$4x + 18$	$=$	$7x - 6$	$18 = 3x - 6$
$-4x$		$-4x$	$+6 \quad +6$
			$24 = 3x$



TQ is an angle bisector

$$\angle 1 = 7x - 7 \quad \angle 2 = 5x + 13$$

$$\angle 1 = \angle 2$$

↓ ↓

$$7x - 7 = 5x + 13$$

$$\begin{array}{r} -5x \\ -5x \end{array}$$

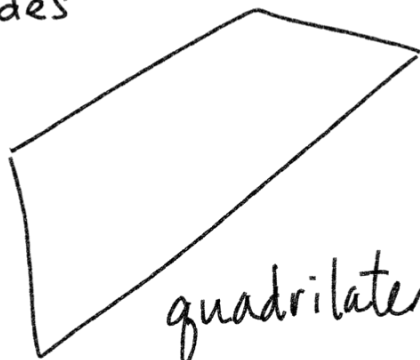
$$2x - 7 = 13$$

$$\begin{array}{r} +7 \quad +7 \end{array}$$

$$\frac{2x}{2} = \frac{20}{2}$$

$$\boxed{x = 10}$$

4 sides



quadrilateral

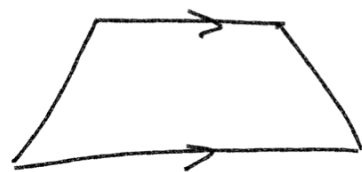
0 parallels



kite

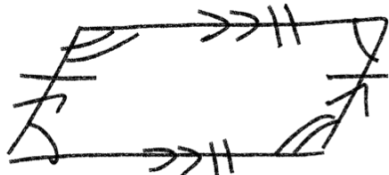
adjacent sides
equal

1 parallel



trapezoid

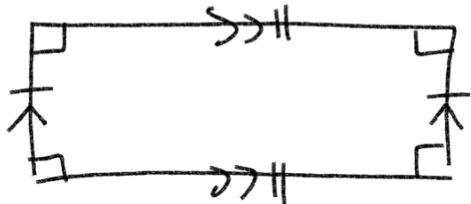
2 parallels



parallelogram

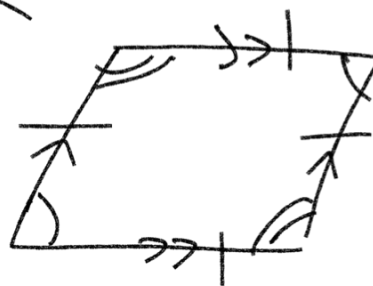
opposite sides congruent
opposite angles congruent

4 equal angles



Rectangle

4 equal sides



Rhombus

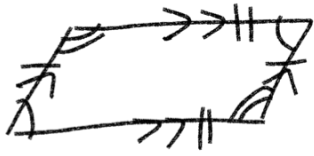
4 equal
angles



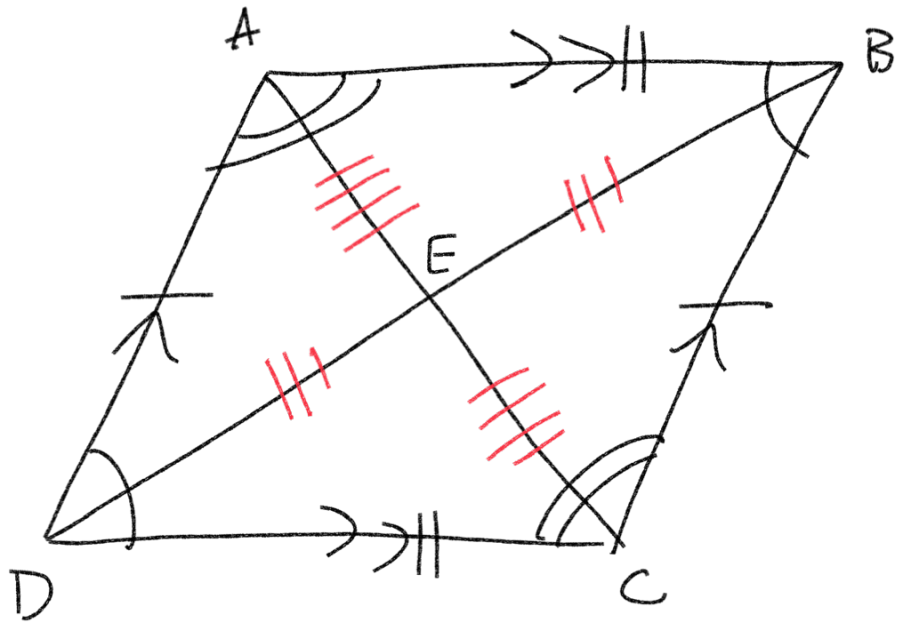
square

4 equal
sides

Parallelogram



Diagonals bisect each other



$$\overline{DE} \cong \overline{EB}$$

$$\overline{AE} \cong \overline{EC}$$

$$\triangle BAE \cong \triangle DCE$$

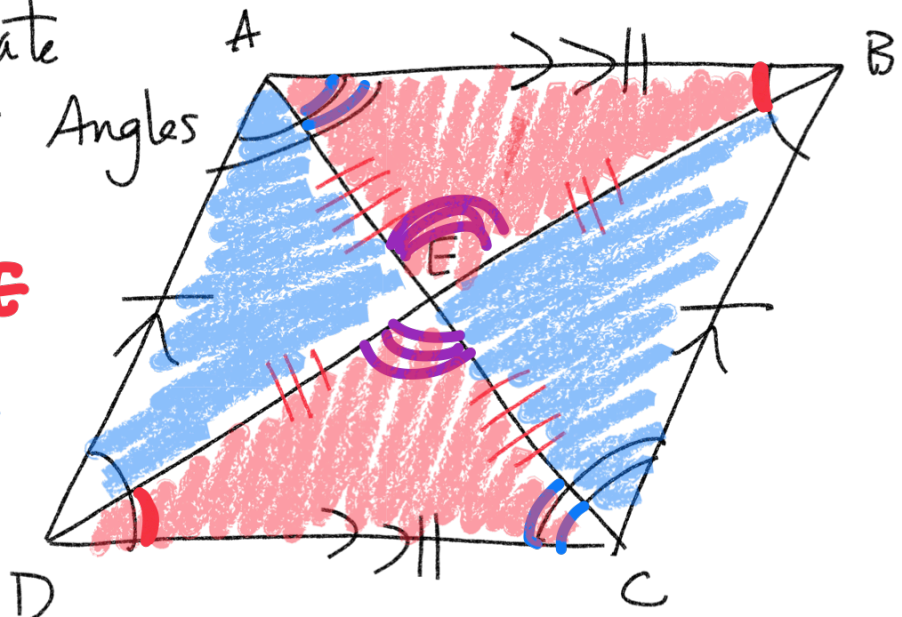
Parallels → Alternate Interior Angles

$$\angle ABE \cong \angle CDE$$

$$\angle BAE \cong \angle DCE$$

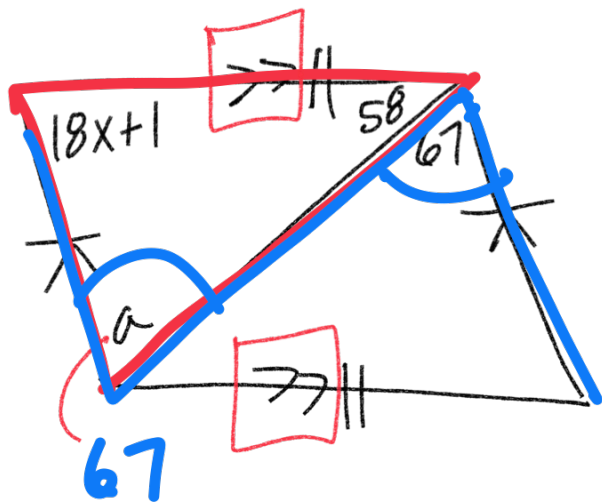
$$\angle AEB \cong \angle CED$$

vertical angles



2 pairs of congruent triangles

Know: this is a Parallelogram



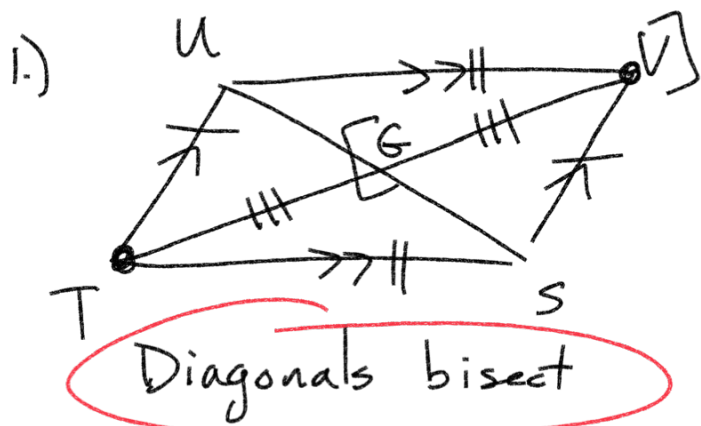
$a = 67$ Alternate Interior Angles

$$18x + 1 + 58 + 67 = 180$$

$$\begin{array}{r} 18x + 126 = 180 \\ -126 \quad -126 \end{array}$$

$$\boxed{x = 3}$$

$$\frac{18x}{18} = \frac{54}{18}$$



$$\overline{GV} = 9$$

$$\overline{TU} = 2x - 2$$

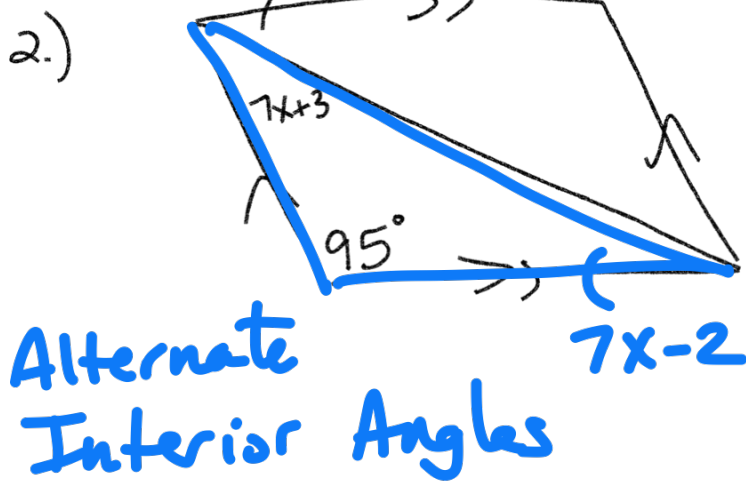
$$2 \overline{GV} = \overline{TU}$$

$$2(9) = 2x - 2$$

$$\begin{array}{r} 18 = 2x - 2 \\ +2 \quad \quad +2 \end{array}$$

$$\boxed{x = 10}$$

$$\frac{20}{2} = \frac{2x}{2}$$



$$7x - 2 + 7x + 3 + 95 = 180 \leftarrow$$

$$\begin{array}{r} 14x + 96 = 180 \\ -96 \quad -96 \end{array} \quad \frac{14x}{14} = \frac{84}{14} \quad \boxed{x = 6}$$

