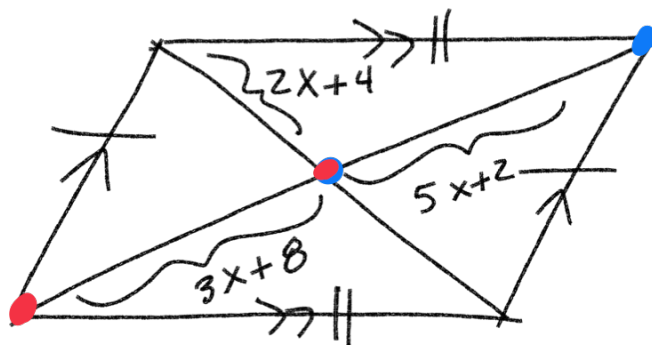
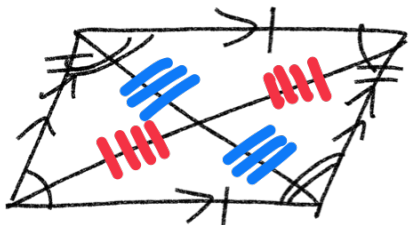


Parallelogram

True for all parallelograms

- Diagonals are bisectors



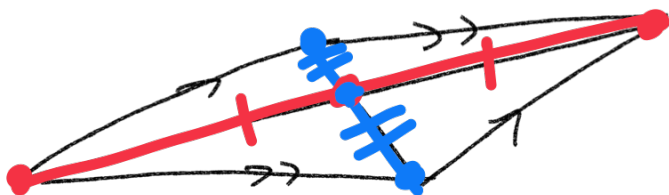
$$\boxed{3x+8} = \boxed{5x+2}$$

-3x -3x

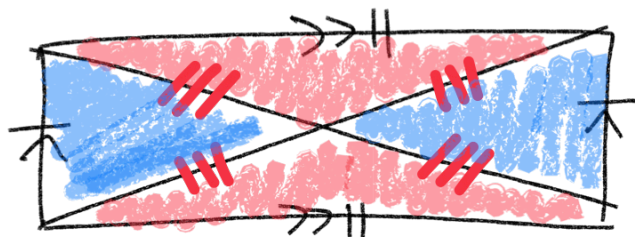
$$\begin{matrix} 8 & = & 2x & + & 2 \\ -2 & & -2 & & \end{matrix}$$

$$\frac{6}{2} = \frac{2x}{2}$$

$$\boxed{x = 3}$$



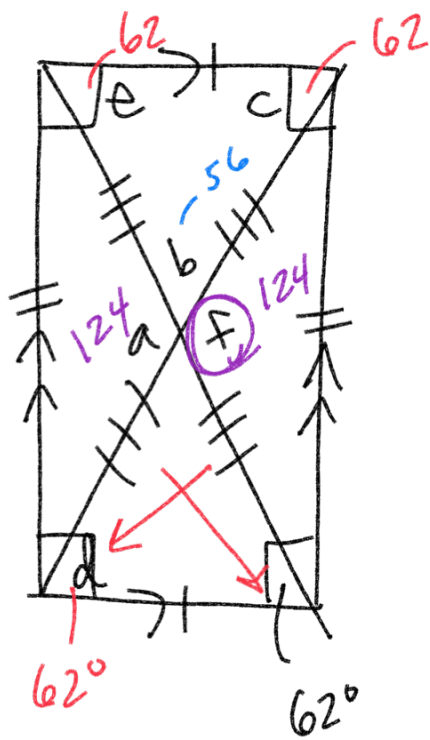
Rectangle (Parallelogram)



4 congruent angles

- Diagonals are congruent

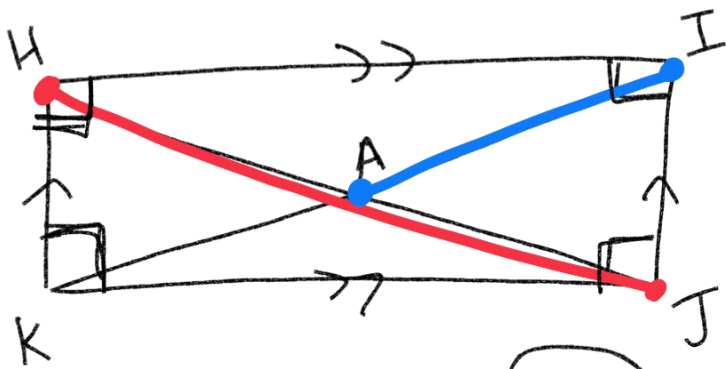
- 2 pairs of isosceles triangles



- $a = 124$ - linear pairs
- $b = 56$ - sum of the interior angles
- $c = 62$ - alternate interior
- $d = 62^\circ$ - isosceles triangle
- $e = 62$ - isosceles
- $f = 124$ vertical angles

$$62 + 62 + \underline{\quad} = 180$$

$$\begin{array}{r} 124 + \underline{\quad} = 180 \\ -124 \qquad -124 \\ \hline \underline{\quad} = 56 \end{array}$$



$$\overline{HJ} = 3x + 7$$

$$\overline{AI} = 2x + 3$$

$$\overline{HJ} = 2 \overline{AI}$$

$$3x + 7 = 2(2x + 3)$$

$$3x + 7 = 4x + 6$$

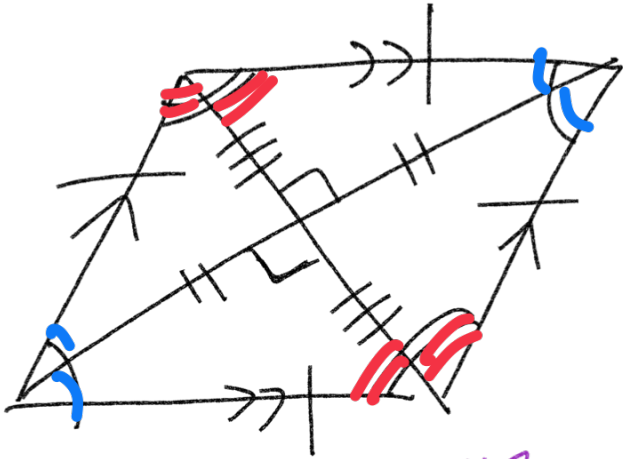
$$\begin{array}{r} -3x \qquad -3x \\ \hline \end{array}$$

$$\begin{array}{r} 7 = x + 6 \\ -6 \qquad -6 \\ \hline \end{array}$$

$$\boxed{1 = x}$$

Rhombus

4 equal sides



- Diagonals are perpendicular bisectors

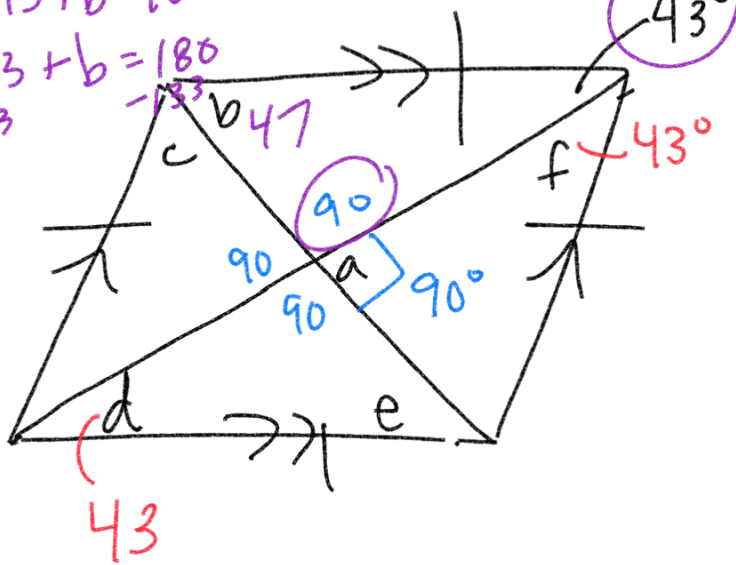
- Diagonals are angle bisectors

$$90 + 43 + b = 180$$

$$b = 47$$

$$133 + b = 180$$

$$-133$$



a = 90 - perpendicular bisectors

b = 47 - sum of interior

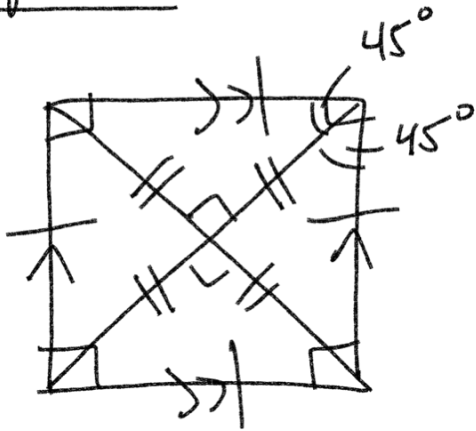
c = 47 - angle bisectors

d = 43 - Alt. interior

e = 47 - Alt. interior

f = 43° - angle bisector

Square



Parallelogram

- diagonals are bisectors

↳ 4 equal angles

Rectangle

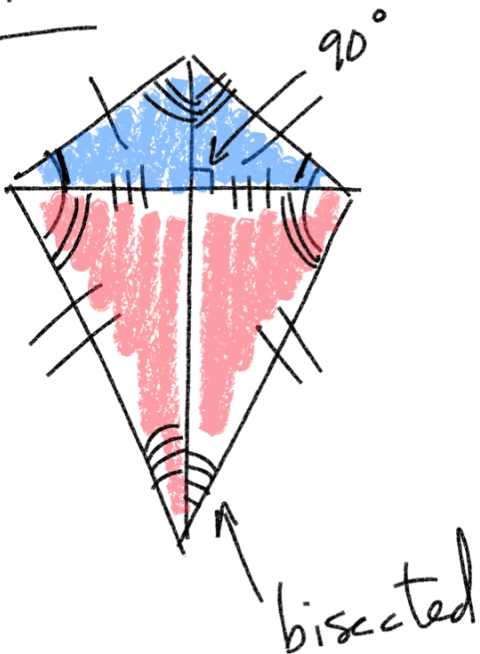
- diagonals are congruent

Rhombus 4 equal sides

- diagonals are angle bisectors

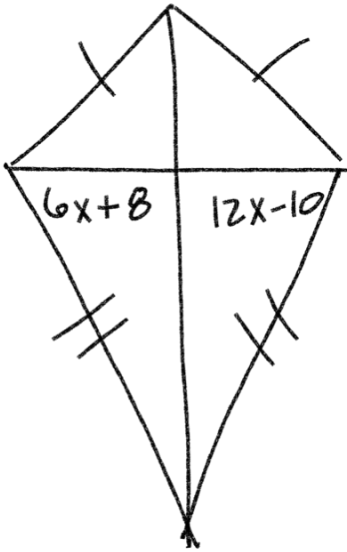
- diagonals are perpendicular bisectors

Kite



Adjacent sides equal
one diagonal is a perpendicular bisector

2 isosceles triangles



$$6x + 8 = 12x - 10$$

$$-6x \quad -6x$$

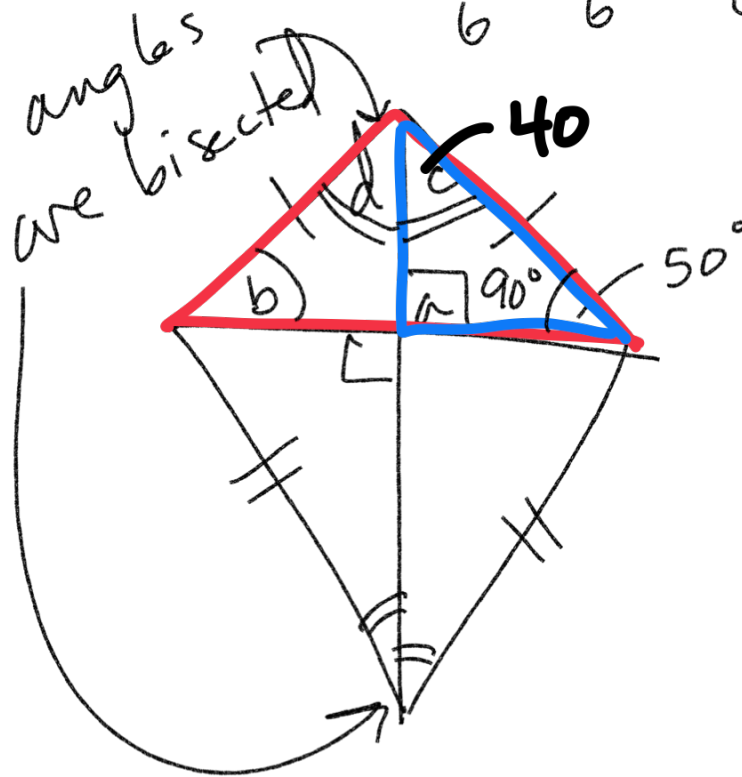
$$8 = 6x - 10$$

$$+10 \quad +10$$

$$\frac{18}{6} = \frac{6x}{6}$$

$$x = 3$$

$a = 90^\circ$
 $b = 50^\circ$
 $c = 40^\circ$
 $d = 40$



Trapezoid

isosceles trapezoid

creates two pairs

of isosceles triangles

