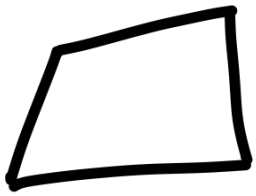
M-G Geometry Week 26 4/6

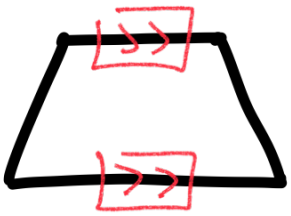


4 sided

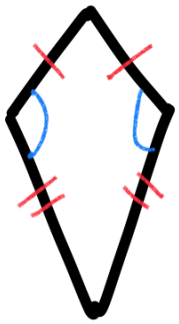
quadrilateral

0 parallel

1 pair of parallels

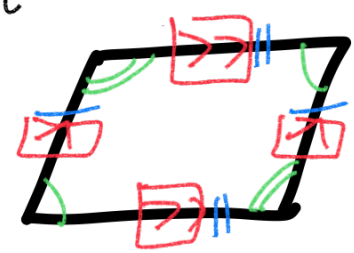


trapezoid



kite

adjacent sides congruent

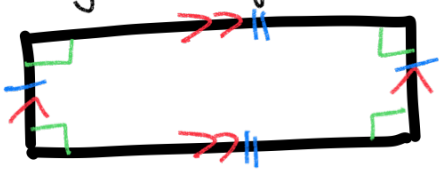


2 pairs of parallels

opposite sides & angles congruent

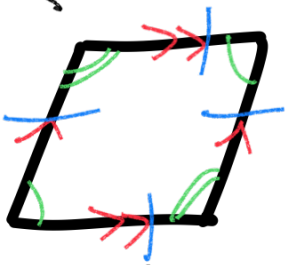
parallelogram

4 angles congruent

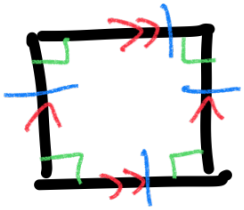


Rectangle

4 sides congruent



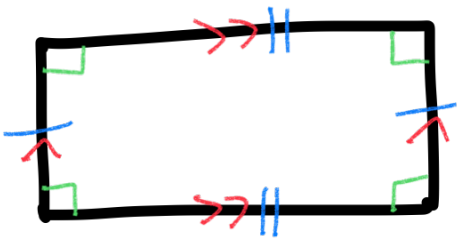
Rhombus



square

4 angles congruent

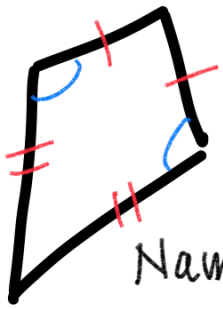
4 sides congruent



Name: Rectangle

- [x] quadrilateral
- ~~kite~~ [ ]
- [x] parallelogram — 2 sets of arrows
- ~~trapezoid~~ [ ]
- [x] rectangle
- [ ] rhombus
- [ ] square

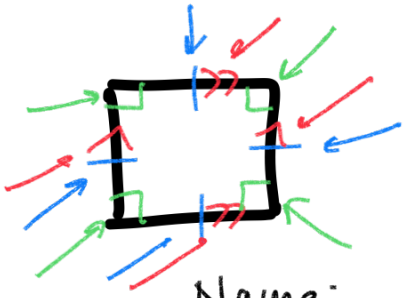
1)



Name: kite

- [x] quadrilateral
- [x] kite
- ~~parallelogram~~ [ ]
- [ ] trapezoid
- ~~rectangle~~ [ ]
- ~~rhombus~~ [ ]
- ~~square~~ [ ]

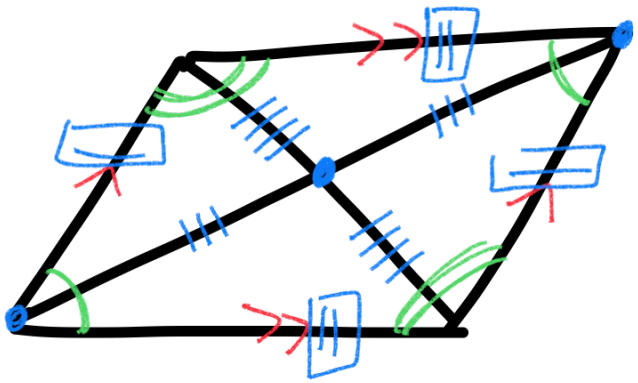
2.)



Name:

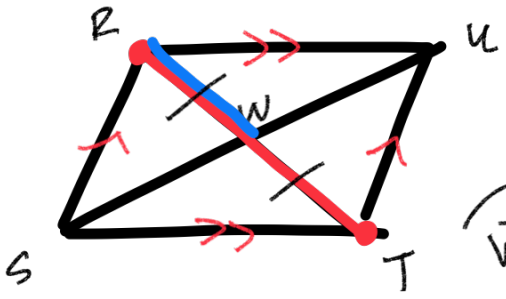
- [x] quadrilateral
- [ ] kite
- [x] parallelogram
- [ ] trapezoid
- [x] rectangle ←
- [x] rhombus ←
- [x] square

# Parallelogram



Diagonals are bisectors

1.)




$\overline{TR} = 38$

$\overline{WR} = 2x+5$

Diagonals are bisectors

$\overline{WR} \cong \overline{WT}$

$\overline{WR} + \overline{WT} = \overline{TR}$

$\overline{WR} + \overline{WR} = \overline{TR}$

$2\overline{WR} = \overline{TR}$

$2(2x+5) = 38$

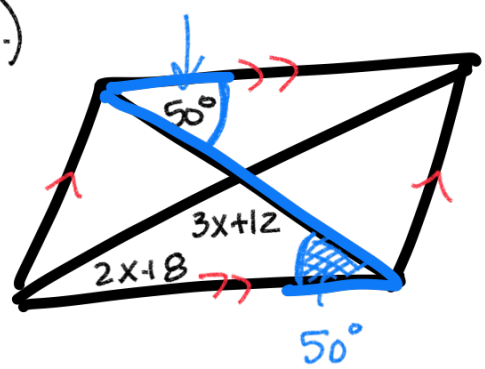
$4x + 10 = 38$

$-10 \quad -10$

$\frac{4x}{4} = \frac{28}{4}$

$\boxed{x = 7}$

2.)




parallel sides open up the possibility of

Alternate Interior Angles

$50 + 2x + 8 + 3x + 12 = 180$

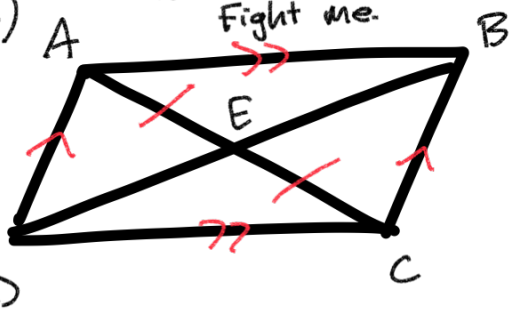
$5x + 70 = 180$

$-70 \quad -70$

$\frac{5x}{5} = \frac{110}{5}$

$\boxed{x = 22}$

1.) Drawn to scale. Fight me.




$\overline{AE} = 3x+8$

$\overline{EC} = 5x+2$

Diagonals are bisectors

$\overline{AE} = \overline{EC}$

$3x+8 = 5x+2$

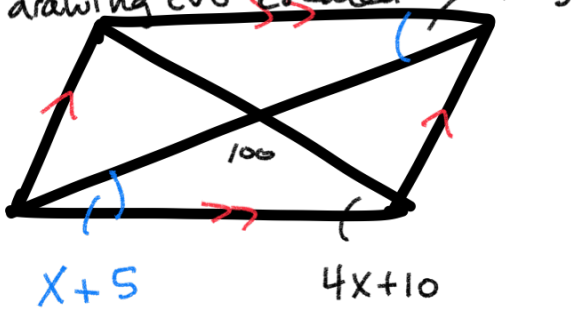
$-3x \quad -3x$

$8 = 2x+2$

$-2 \quad -2$

$\frac{6}{2} = \frac{2x}{2}$ $\quad x = 3$

2.) This is the most perfect drawing ever created



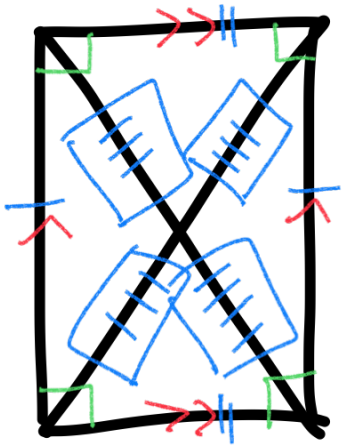

$100+4x+10+x+5 = 180$

$5x+115 = 180$

$-115 \quad -115$

$\frac{5x}{5} = \frac{65}{5}$ $\quad x = 13$

Rectangle (is also a parallelogram)

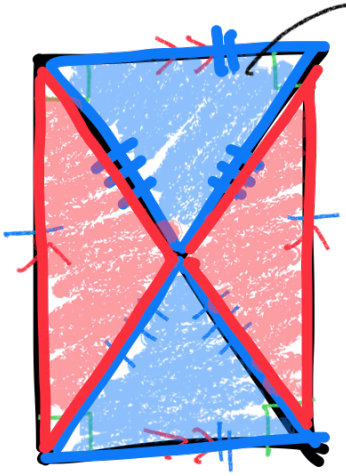


Parallelogram

Diagonals bisect each other

Rectangle (Difference)

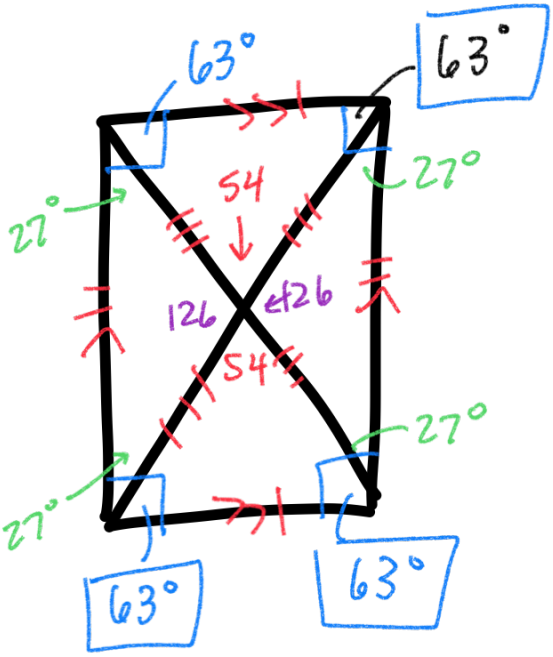
All diagonals are congruent



isosceles triangle

Triangle with two equal sides → isosceles

2 pairs of congruent isoscele triangles




$63 + 63 + __ = 180$

$126 + __ = 180$

$-126 \quad -126$

$__ = 54$

Linear pairs

$54 + __ = 180$

$-54 \quad -54$

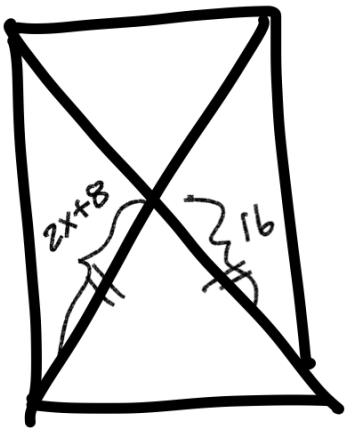
$__ = 126$

$2(__) + 126 = 180$

$-126 \quad -126$

$\frac{2(__)}{2} = \frac{54}{2}$

$__ = 27$




In rectangles, all diagonals are equal

$2x + 8 = 16$

$-8 \quad -8$

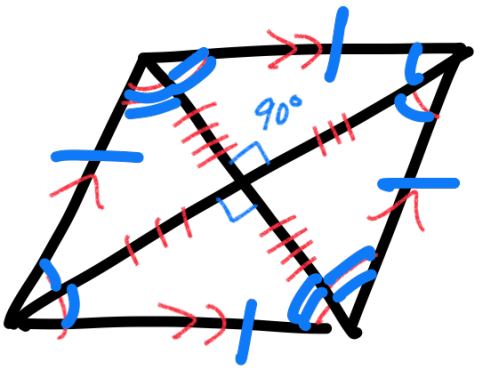
$\frac{2x}{2} = \frac{8}{2}$

$x = 4$

# Rhombus (is also a parallelogram)

**Parallelogram**

Diagonals bisect each other

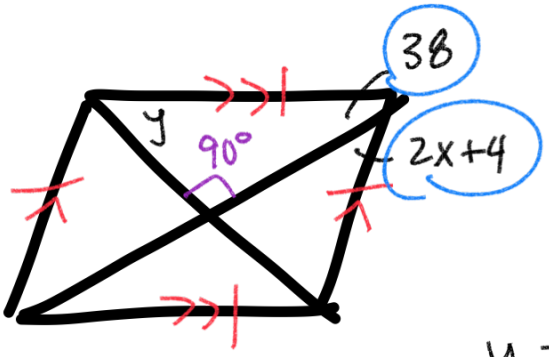



4 congruent sides

## Rhombus

Diagonals are perpendicular bisectors

Diagonals are also angle bisectors




$2x+4=38$

$-4 \quad -4$

$\frac{2x}{2}=\frac{34}{2}$ $\quad x=17$

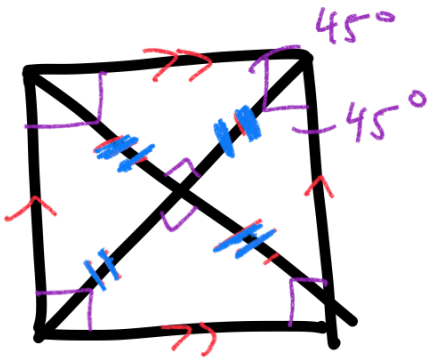
$y+38+90^\circ=180^\circ$

$y+128=180^\circ$

$-128 \quad -128$

$y=52$

## Square




## Parallelogram

Diagonals are bisectors

## Rectangle

Diagonals are congruent

## Rhombus

Diagonals are perpendicular bisectors
and angle bisectors