

SOLUTIONS:

1. J (-8,10) U (2,6) A (-2,-4) N (-12,10)

All 4 sides are congruent:  $JU=UA=AN=NJ=2\sqrt{29}$

Diagonals are congruent:  $JA=UN=2\sqrt{58}$

The parallelogram is a SQUARE

2. H (-6,-8) A (3,-7) W (1,-11) T (-8,-12)

Opposite sides are congruent:  $HA=WT=\sqrt{82}$  and  $AW=TH=2\sqrt{5}$

Diagonals are NOT congruent:  $HW=\sqrt{58}$  and  $AT=\sqrt{146}$

The parallelogram is simply a PARALLELOGRAM

3. C (-4,4) U (-1,10) T (13,3) E ((10,-3)

Opposite sides are congruent:  $CU=TE=3\sqrt{5}$  and  $UT=EC=7\sqrt{5}$

Diagonals are congruent:  $CT=UE=\sqrt{290}$

The parallelogram is a RECTANGLE

4. L (6,-7) O(8,-3) V (10,-7) E (8,-11)

All sides are congruent:  $LO=OV=VE=EL=2\sqrt{5}$

Diagonals are NOT congruent:  $LV=4$  and  $OE=8$

The parallelogram is a RHOMBUS