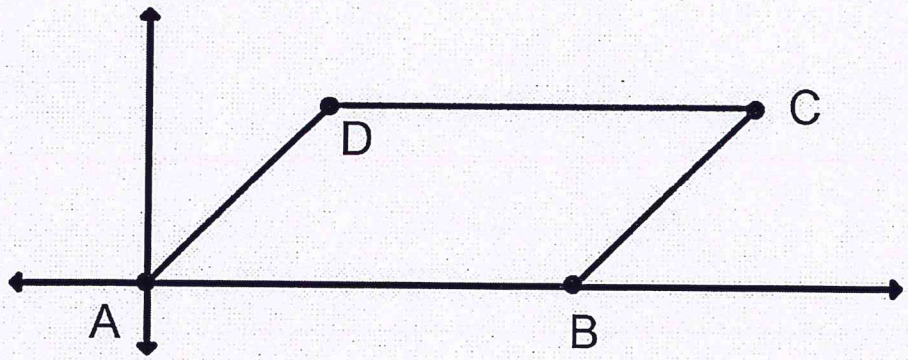
Bellwork Geo Tuesday, February 11, 2020

1. Use coordinate geometry to determine the most precise name for quadrilateral PQRS.

$P(-2,-2)$ $Q(5,-3)$ $R(10,2)$ $S(1,9)$

2. Label the coordinates of the vertices of Parallelogram $ABCD$ using the fewest number of variables as possible.



3. Use a sheet of graph paper to do the following:

a) Place four points on a piece of graph paper that form a Square. NONE of the sides can be horizontal or vertical.

b) Place four points on a piece of graph paper that form a Rectangle. NONE of the sides can be horizontal or vertical.

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ANSWERS

1. Use coordinate geometry to determine the most precise name for quadrilateral PQRS.

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midpt diagonals

PR: $\left(\frac{-2+10}{2}, \frac{-2+2}{2}\right) = (4,0)$

QS: $\left(\frac{5+1}{2}, \frac{-3+9}{2}\right) = (3,3)$

not a ll-gram b/c diagonals don't bisect.

Length of sides

$PQ = \sqrt{(5--2)^2+(-3--2)^2} = \sqrt{7^2+(-1)^2} = \sqrt{50}$

$QR = \sqrt{(2--3)^2+(10-5)^2} = \sqrt{5^2+5^2} = \sqrt{50}$

$RS = \sqrt{(10-1)^2+(2-9)^2} = \sqrt{9^2+7^2} = \sqrt{130}$

$SP = \sqrt{(1--2)^2+(9--2)^2} = \sqrt{3^2+11^2} = \sqrt{130}$

slope of sides

PQ $m = \frac{-2--3}{-2-5} = \frac{1}{-7}$

QR $m = \frac{2--3}{10-5} = \frac{5}{5} = 1$

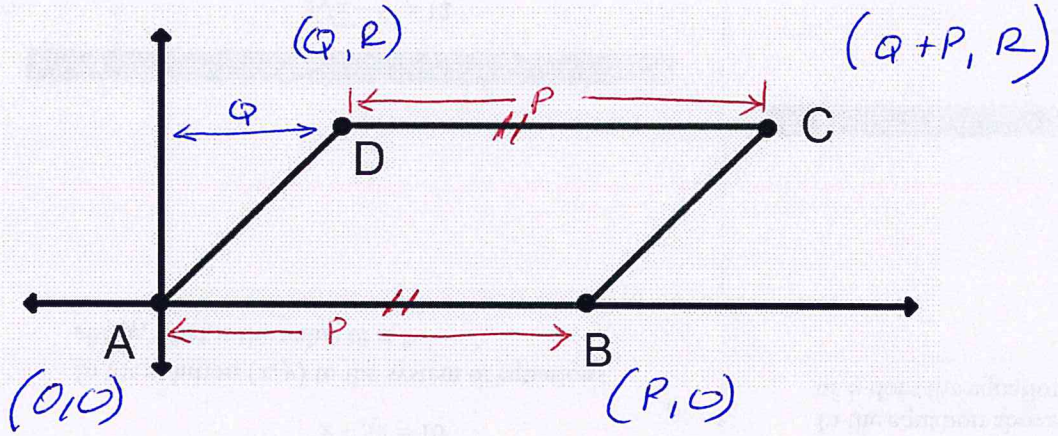
RS $m = \frac{9-2}{1-10} = \frac{7}{-9}$

SP $m = \frac{9--2}{1--2} = \frac{11}{3}$

NOT A TRAPEZOID b/c NO parallel sides

PQRS is a KITE b/c 2 pair of adjacent sides are $\cong$

2. Label the coordinates of the vertices of Parallelogram $ABCD$ using the fewest number of variables as possible.



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example answer is given

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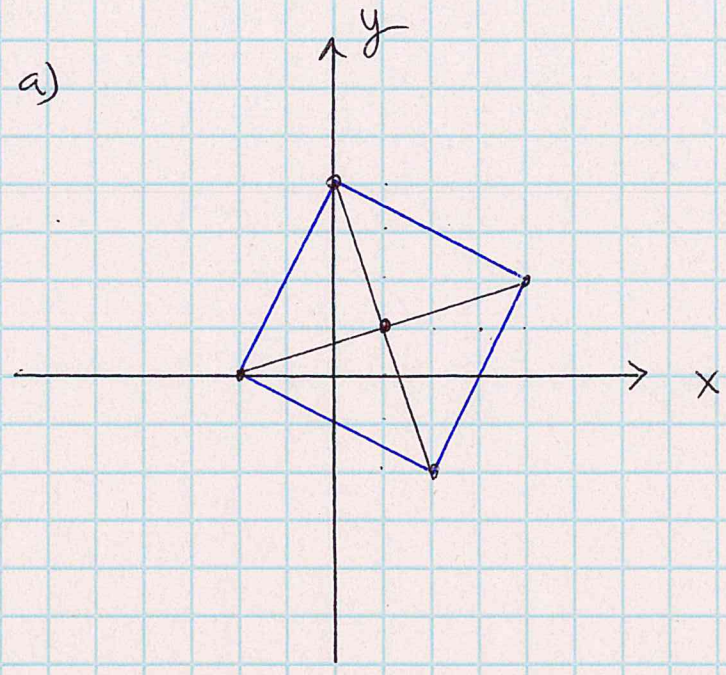
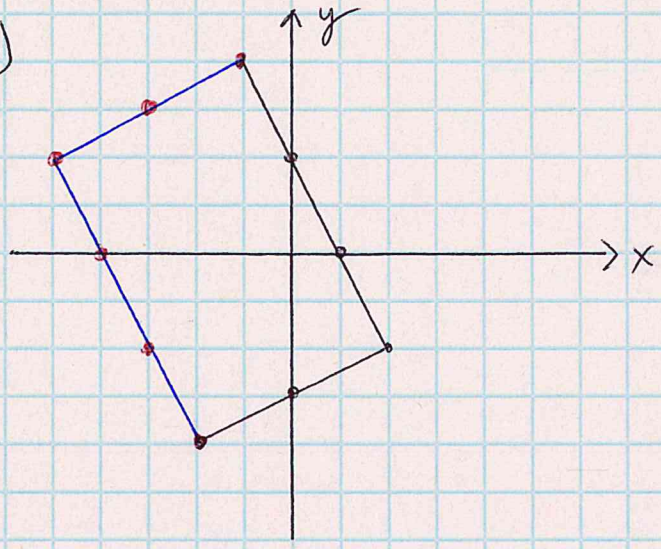
(3) a)



make diagonals ⊥ and ≅

b)



make adjacent sides have opp reciprocal slopes (⊥) but different length.

then draw other two sides