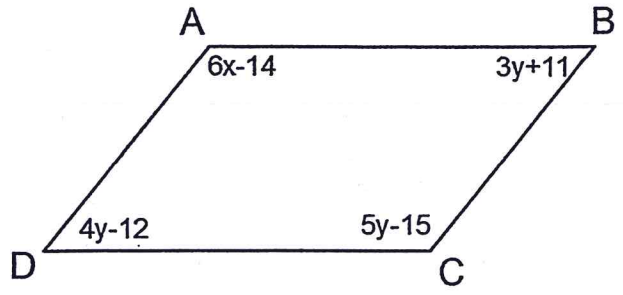
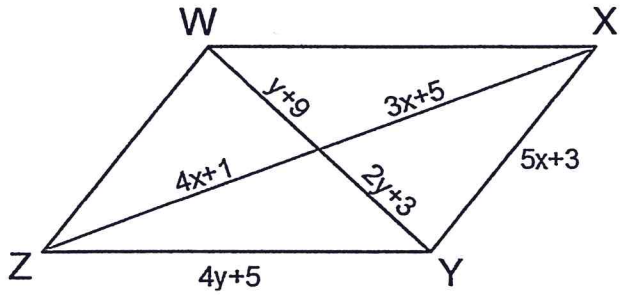
Bellwork Geometry Monday, January 27, 2020

1. Find the value of x and y in Parallelogram ABCD.



2. Find the lengths of the four sides of Parallelogram WXYZ.



3. The coordinates of Quadrilateral PQRS are given below:

$P(12,-6)$ $Q(21,-9)$ $R(18,-16)$ $S(9,-13)$

a) Find the midpoint of both diagonals.

b) Is PQRS a Parallelogram?

4. Use this information about parallelogram WXYZ: WX is 12 more than XY. The perimeter is 120. Find the lengths of the four sides.

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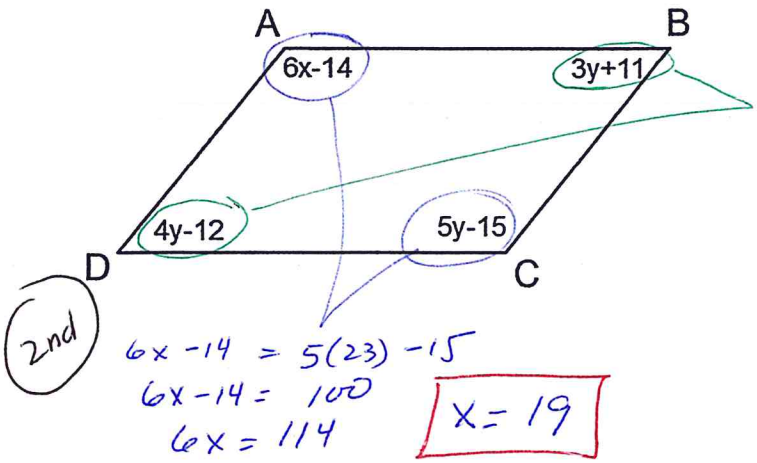
ANSWERS

1. Find the value of x and y in Parallelogram ABCD.



1st

$3y+11 = 4y-12$

$-3y \quad -3y$

$11 = y-12$

$+12 \quad +12$

$y = 23$

2nd

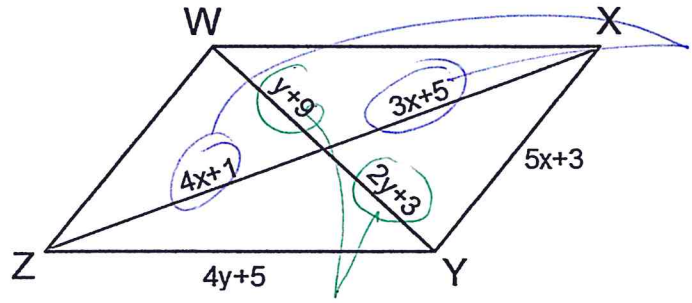
$6x-14 = 5(23)-15$

$6x-14 = 100$

$6x = 114$

$x = 19$

2. Find the lengths of the four sides of Parallelogram WXYZ.



$4x+1 = 3x+5$

$-3x \quad -3x$

$x+1 = 5$

$-1 \quad -1$

$x = 4$

$2y+3 = y+9$

$-y \quad -y$

$y+3 = 9$

$-3 \quad -3$

$y = 6$

$XY = WZ = 5(4)+3 = 23$

$WX = ZY = 4(6)+5 = 29$

SIDE LENGTHS ARE

23, 29, 23, 29

XY, ZY, ZW, WX

3. The coordinates of Quadrilateral PQRS are given below:

$P(12,-6)$ $Q(21,-9)$ $R(18,-16)$ $S(9,-13)$

a) Find the midpoint of both diagonals.

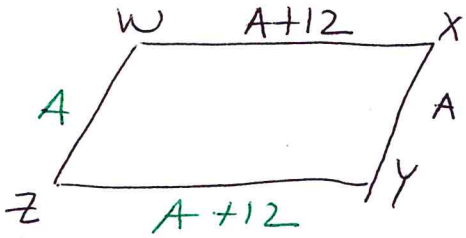
midpoint of Diagonal $\overline{PR}$: $\left(\frac{12+18}{2}, \frac{-6+-16}{2}\right) = (15,-11)$

midpoint of Diagonal $\overline{QS}$: $\left(\frac{21+9}{2}, \frac{-9+-13}{2}\right) = (15,-11)$

b) Is PQRS a Parallelogram?

Yes, diagonals have the same midpoint. Therefore, the diagonals bisect each other which makes PQRS a ll-gram

4. Use this information about parallelogram WXYZ: WX is 12 more than XY. The perimeter is 120. Find the lengths of the four sides.



opp sides of a ll-gram are congruent

$120 = A+12+A+A+12+A$

$120 = 4A + 24$

$96 = 4A$

$A = 24$

A, A+12

SIDES ARE: 24, 36, 24, 36