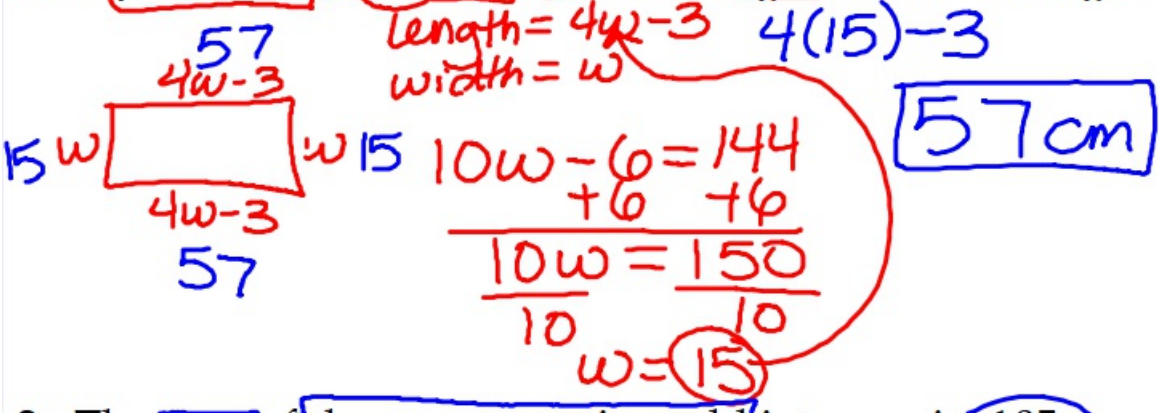
1. The length of a rectangle is 3 less than 4 times the width. If the perimeter is 144 cm, find the length of the rectangle.



2. The sum of three consecutive odd integers is -105. Find the value of the largest integer.

X -37

X+2 -35

X+4 -33

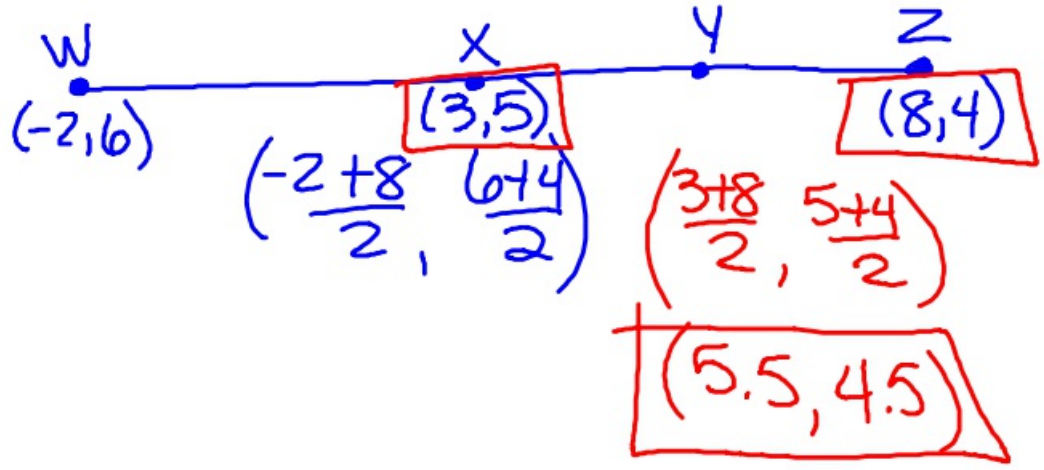
$3X+6=-105$

$-6 \quad -6$

$\frac{3X}{3}=\frac{-111}{3}$

$X=-37$

3. X is the midpoint of WZ and Y is the midpoint of XZ. Point W is at (-2, 6) and Point Z is at (8, 4), find the coordinates of point Y.



SUBSTITUTION METHOD

STEPS TO SOLVE

1. Solve one equation for x or y

2. Plug in this expression into the other equation and Solve for the variable.

3. Plug in your answer into the revised equation from Step 1 and Solve for the other variable.

Substitution Method

Is one equation solved for a specific variable?

$y = 6x$

$2x + 3y = -20$

$y = 6(-1)$ $y = -6$

$(-1, -6)$

$2x + 3(6x) = -20$

$2x + 18x = -20$

$\frac{20x}{20} = \frac{-20}{20}$

$x = -1$

Substitution Method

$x = 4y + 7$

$2x - 6y = 12$

$2(4y+7) - 6y = 12$

$8y + 14 - 6y = 12$

$2y + 14 = 12$

$-14 \quad -14$

$2y = -2$

$\frac{2y}{2} = \frac{-2}{2}$

$y = -1$

$x = 4(-1) + 7$

$x = 3$

$(3, -1)$

Substitution Method

$2x - 3y = -11$

$2x + y = 9$

$-2x \quad -2x$

$y = -2x + 9$

$2(2) + y = 9$

$4 + y = 9$

$y = 5$

$(2, 5)$

$2x - 3(-2x + 9) = -11$

$2x + 6x - 27 = -11$

$8x - 27 = -11$

$+27 \quad +27$

$\frac{8x}{8} = \frac{16}{8}$

$x = 2$

Substitution Method

11.

$y = 4x - 1$

$y = 2x - 5$

$4x - 1 = 2x - 5$

$-2x \quad -2x$

$2x - 1 = -5$

$+1 \quad +1$

$\frac{2x}{2} = \frac{-4}{2}$

$x = -2$

$y = 4(-2) - 1$

$y = -8 - 1$

$y = -9$

$(-2, -9)$

(12)

$x - 3y = -2$

$10x + 8y = -20$

$x - 3y = -2$

$+3y \quad +3y$

$x = 3y - 2$

$10(3y - 2) + 8y = -20$

$30y - 20 + 8y = -20$

$38y - 20 = -20$

$+20 \quad +20$

$\frac{38y}{38} = \frac{0}{38}$

$y = 0$

$x - 3(0) = -2$

$x = -2$

$(-2, 0)$