

Week 3 – Math 170 challenge of the week

Find the value of x and y that makes this system correct.

Cross multiply

$$\frac{x+1}{y+1} = \frac{x-2}{y-3}$$

both

$$\frac{x-2}{y-1} = \frac{x+5}{y+3}$$

top

$$\cancel{xx} - 3x + y - 3 = \cancel{xx} + x - 2y - 2$$

$$-4x + 3y = 1$$

bottom

$$\cancel{xx} - 2y + 3x - 6 = \cancel{xx} + 5y - x - 5$$

$$-7y + 4x = 1$$

Now solve the system of eqns

$$-4x + 3y = 1$$

$$+4x - 7y = 1$$

$$-4y = 2$$

$$y = -1/2$$

$$4x - 7(-1/2) = 1$$

$$4x + 7/2 = 1$$

$$4x = -5/2$$

$$x = -5/8$$