Warmup: Systems of Equations 2

Solve by algebra:

$$4(x-2)^2+4(y-3)^2=16$$

Rearrange $y+x=3$ → $x=3-y$ (plug in for x)

$4(3-y-2)^2+4(y-3)^2=16$

$4(1-y)^2+4(y-3)^2=16$

$4(1-y)(1-y)+4(y-3)(y-3)=16$

$4(1-2y+y^2)+4(y^2-6y+9)=16$

$4-8y+4y^2+4y^2-24y+36-16=0$

$\frac{8y^2-32y+24=0}{8}$

$y^2-4y+3=0$

$(y-3)(y-1)=0$

$y=3, 1$

$y=3$	$y=1$
$x=3-3$	$x=3-1$
$x=0$	$x=2$

$(0,3)$ $(2,1)$