10. $y^2-4y-12x+64=0$

"y"

REWRITING IN STANDARD FORM

STEP 1: IDENTIFY THE MAIN VARIABLE (ONE WITH SQUARED)

STEP 2: GET EVERYTHING WITH THE MAIN VARIABLE ON ONE SIDE, EVERYTHING ELSE ON OTHER SIDE

STEP 3: COMPLETE THE SQUARE ON MAIN VARIABLE

STEP 4: FACTOR OUT THE NUMBER BEFORE THE NON-MAIN VARIABLE

STEP 5: REWRITE THIS NUMBER AS 4 TIMES SOMETHING

$y^2-4y=12x-64$

$(-4\cdot\frac{1}{2})^2$ $(-2)^2$ 4

$y^2-4y+4=12x-64+4$

$(y-2)^2=12x-60$

$(y-2)^2=12(x-5)$

$(y-2)^2=4(3)(x-5)$

$k=2$ $p=3$ $h=5$

VERTEX: $(h,k)=(5,2)$

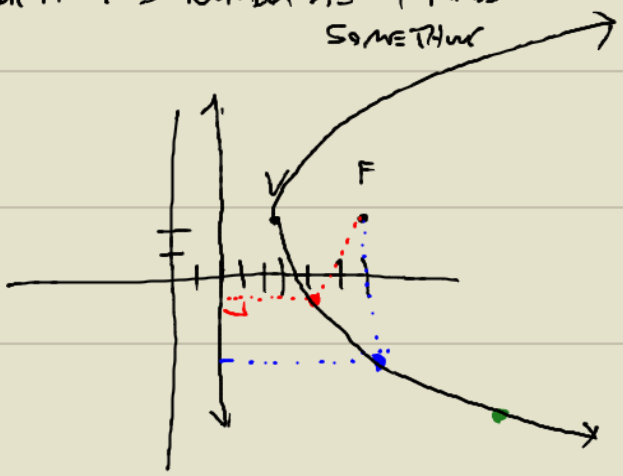
Focus: $(h+p,k)=(5+3,2)$

$(8,2)$

DIR: $x=h-p$

$x=5-3$

$x=2$



11. $x^2-12x-12y+60=0$

"x"

$(-12\cdot\frac{1}{2})^2$ $(-6)^2$ 36

$x^2-12x=12y-60$

$x^2-12x+36=12y-60+36$

$(x-6)^2=12y-24$

$(x-6)^2=12(y-2)$

$(x-6)^2=4(3)(y-2)$

$h=6$ $p=3$ $k=2$

VERTEX: (h,k)

$(6,2)$

Focus: $(h,k+p)$

$(6,2+3)$

$(6,5)$

DIR: $y=k-p$

$y=2-3$

$y=-1$