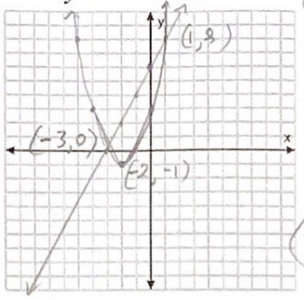
Additional Practice on solving Quadratic and Linear Systems

Solve each system Algebraically and Graphically

1. $y = 2x + 6$
   $y = x^2 + 4x + 3$



$2x+6 = x^2+4x+3$

$x^2+2x-3=0$

$(x+3)(x-1)=0$

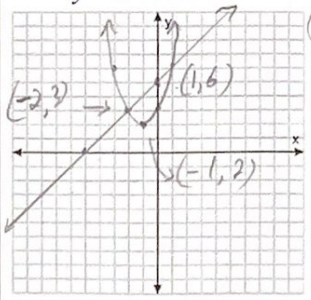
$x = 1, -3$

$(1, 8)$; $(-3, 0)$

h: $\frac{-b}{2a} = \frac{-4}{2} = -2$

k: -1

2. $2y - 2x = 10 \Rightarrow y = x + 5$
   $y = x^2 + 2x + 3$



$x+5 = x^2+2x+3$

$x^2+x-2=0$

$(x+2)(x-1)=0$

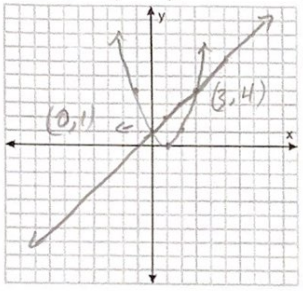
$x = -2, 1$

$(-2, 3)$; $(1, 6)$

h: $\frac{-b}{2a} = \frac{-2}{2} = -1$

$k = f(-1) = 2$

3. $y = x + 1$
   $y = (x-1)^2$



$x+1 = (x-1)^2$

$x+1 = x^2-2x+1$

$x^2-3x=0$

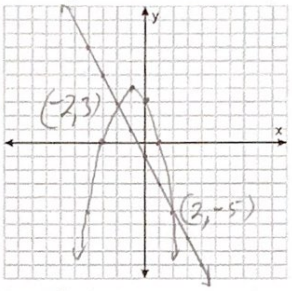
$x(x-3)=0$

$x = 0, 3$

$(0, 1)$; $(3, 4)$

v: $(1, 0)$

4. $y + 1 = -2x$
   $y = -x^2 - 2x + 3$



$y = -2x - 1$

$-2x-1 = -x^2-2x+3$

$-1 = -x^2+3$

$x^2 = 4$

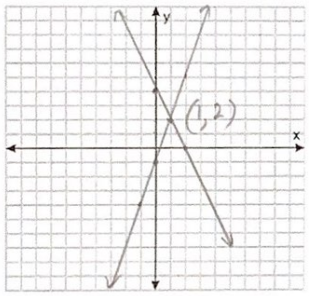
$x = \pm 2$

$(2, -5)$; $(-2, 3)$

$\frac{--2}{2(-1)} = -1$ $(-1, 4)$

$f(-1) = 4$

5. $y = 3x - 1$
   $2x + y = 4$



$2x+3x-1=4$

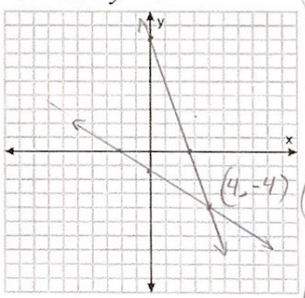
$5x = 5$

$x = 1$

$y = 2$

$(1, 2)$

6. $2x + 3y = -4$
   $3x + y = 8$



$2x+3y=-4$

$-9x-3y=-24$

$-7x = -28$

$x = 4$

$3(4)+y=8$

$y = -4$

$(4, -4)$