1 a) $f(x) = 3x + 2 \Rightarrow$ Crescente, pois $a > 0$

b) $g(x) = -\sqrt{2} \Rightarrow$ Constante, pois $a = 0$

c) $h(x) = -x + 2 \Rightarrow$ decrescente, pois $a < 0$

2. a) $f(x) = 3x + 2$

$f(0) = 3.0 + 2$

$f(0) = 2$

$f(1) = 3.1 + 2$

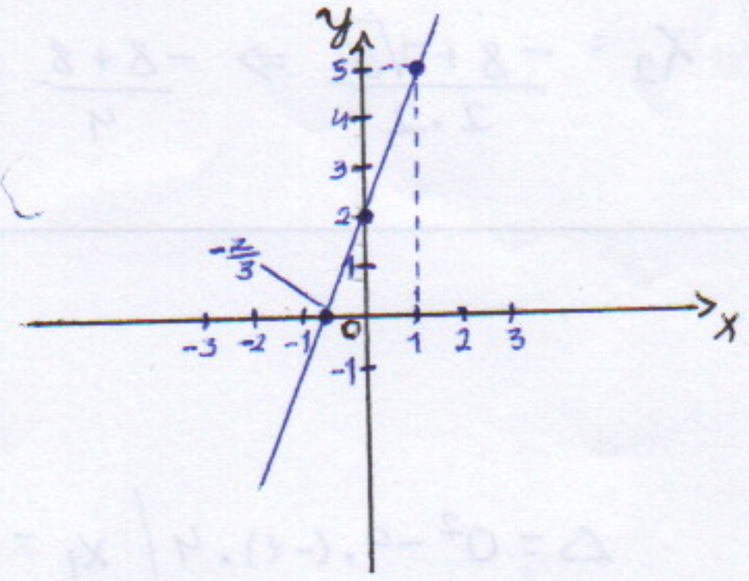
$f(1) = 5$

$f(x) = 0 \Rightarrow$

$3x + 2 = 0 \Rightarrow$

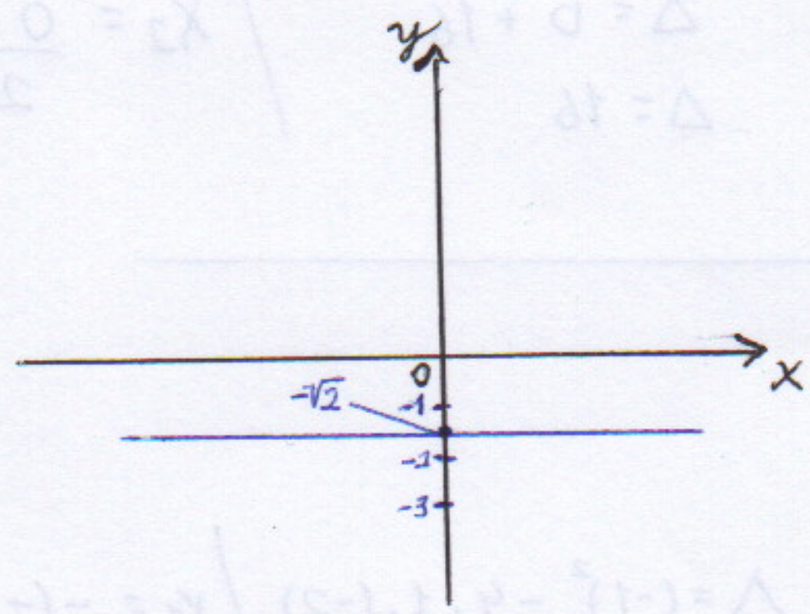
$3x = -2 \Rightarrow$

$x = -\frac{3}{2}$



b) $g(x) = -\sqrt{2}$

$a = 0$, $b = -\sqrt{2}$



c) $h(x) = -x + 2$

$a = -1$, $b = 2$

$h(0) = -1.0 + 2$

$h(0) = 2$

$h(1) = -1.1 + 2$

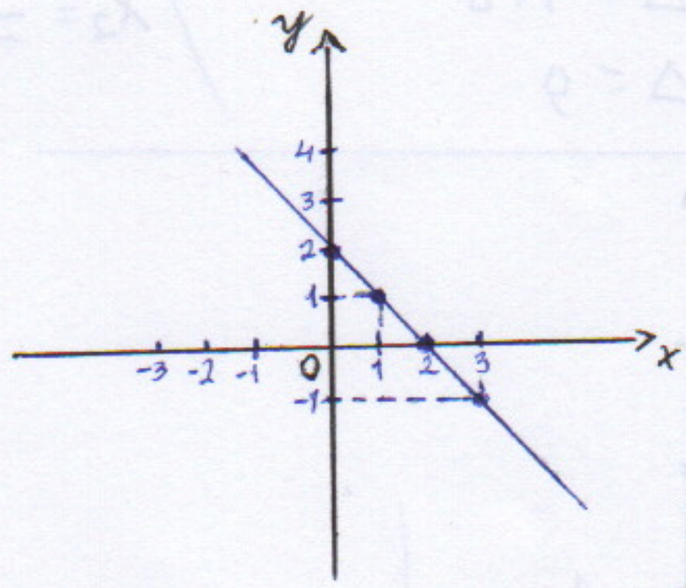
$h(1) = 1$

$h(-1) = -1.(-1) + 2$

$h(-1) = 1 + 2 = 3$

$h(x) = 0 \Rightarrow -1x + 2 = 0$

$-1x = -2 \Rightarrow x = 2$



3. a) $y = 2x^2 + 8x$

$(a=2, b=8, c=0)$

$\Delta = b^2 - 4ac$

$x = \frac{-b \pm \sqrt{\Delta}}{2a}$

$\Delta = 8^2 - 4.2.0$

$\Delta = 64 - 0$

$\Delta = 64$

$x_1 = \frac{-8 - \sqrt{64}}{2.2} \Rightarrow \frac{-8-8}{4} = -\frac{16}{4} = -4$

$x_2 = \frac{-8 + \sqrt{64}}{2.2} \Rightarrow \frac{-8+8}{4} \Rightarrow \frac{0}{4} = 0$

$x_1 = -4$

$x_2 = 0$

b) $y = -x^2 + 4$

$(a=-1, b=0, c=4)$

$\Delta = 0^2 - 4.(-1).4$

$\Delta = 0 - 4.(-4)$

$\Delta = 0 + 16$

$\Delta = 16$

$x_1 = \frac{-0 - \sqrt{16}}{2.(-1)} \Rightarrow \frac{0-4}{-2} = 2$

$x_2 = \frac{0 + \sqrt{16}}{2.(-1)} \Rightarrow \frac{0+4}{-2} = -2$

$x_1 = 2$

$x_2 = -2$

c) $y = x^2 - x - 2$

$(a=1, b=-1, c=-2)$

$\Delta = (-1)^2 - 4.1.(-2)$

$\Delta = 1 - 4.(-2)$

$\Delta = 1 + 8$

$\Delta = 9$

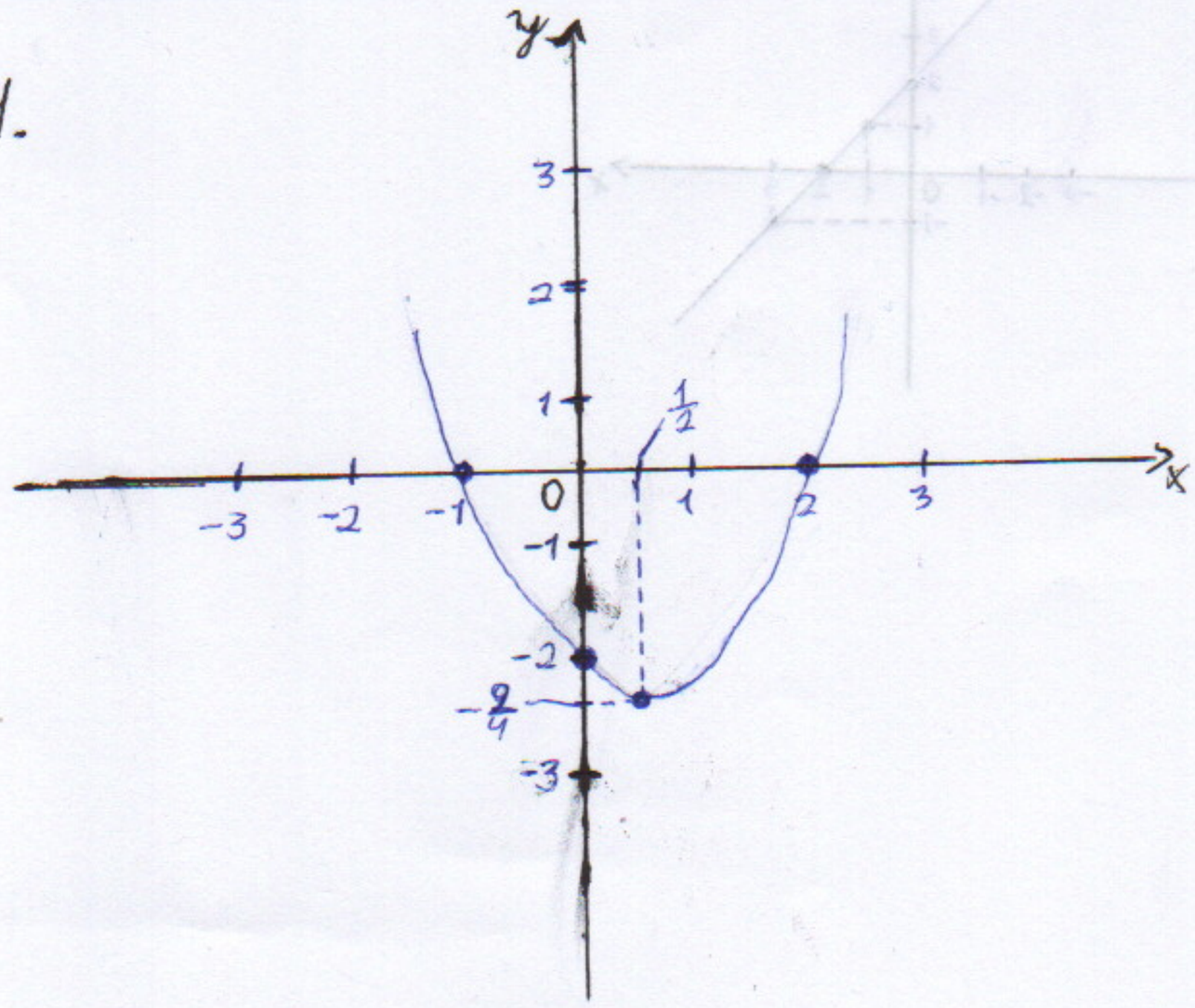
$x_1 = \frac{-(-1) - \sqrt{9}}{2.1} \Rightarrow \frac{1-3}{2} \Rightarrow \frac{-2}{2} = -1$

$x_2 = \frac{-(-1) + \sqrt{9}}{2.1} \Rightarrow \frac{1+3}{2} \Rightarrow \frac{4}{2} = 2$

$x_1 = -1$

$x_2 = 2$

4.



$-\frac{b}{2a} \Rightarrow -\frac{(-1)}{2.1} = \boxed{\frac{1}{2}}$

$-\frac{\Delta}{4a} \Rightarrow \frac{-9}{4.1} = \boxed{\frac{-9}{4}}$