PRE–AP ALGEBRA 2

2A.1 CLASSWORK

1) For both

i) $y = x^2 - 7x + 6$
ii) $y = x^2 - 8x + 18$

a) Find the x– and y–intercepts
b) State the domain and range.

i) $y - 6 = x^2 - 7x$, $y + 6.25 = (x - 3.5)^2$
(+12.25 +12.25)

vertex = $(3.5, -6.25)$

$y = x^2 - 7x + 6 = (x-1)(x-6)$

x-int.: $x = 1$ $x = 6$

y-int.: $x = 0 \Rightarrow y = 6$

domain: $-\infty < x < \infty$

range: $-6.25 \le y < \infty$

ii) $y - 18 = x^2 - 8x$, $y - 2 = (x-4)^2$
(+16 +16)

x-int: none

y-int: $x = 0 \Rightarrow y = 18$

2) For both

i) $y - 4 = |x + 2|$
ii) $y + 2 = |x - 7|$

a) Find the x– and y–intercepts
b) State the domain and range.

i) vertex = $(-2, 4)$

x-int.: none

y-int: $x > -2$, $y - 4 = x + 2$,
$y = x + 6$, $x = 0 \Rightarrow y = 6$

domain: $-\infty < x < \infty$ range: $4 \le y < \infty$

ii) vertex = $(7, -2)$

x-int: $x \le 7$: $y + 2 = -(x - 7)$, $y + 2 = -x + 7$,
$y = -x + 5$, $y = 0 \Rightarrow x = 5$

$x > 7$: $y + 2 = x - 7$, $y = x - 9$,
$y = 0 \Rightarrow x = 9$

y-int.: $y = -x + 5$, $x = 0 \Rightarrow y = 5$

domain: $-\infty < x < \infty$

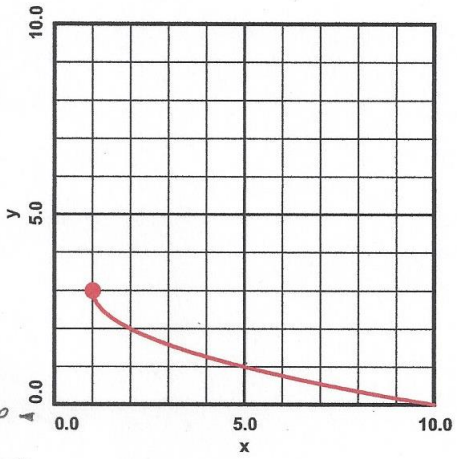
range: $-2 \le y < \infty$

3) For $y = 3 - \sqrt{x - 1}$, fill out the table, and graph the function on the axes provided. Also, state the domain and range of the function.

x	y
1	3
2	2
5	1
10	0

domain: $1 \le x < \infty$

range: $-\infty < y \le 3$



domain: $-\infty < x < \infty$

range: $2 \le y < \infty$