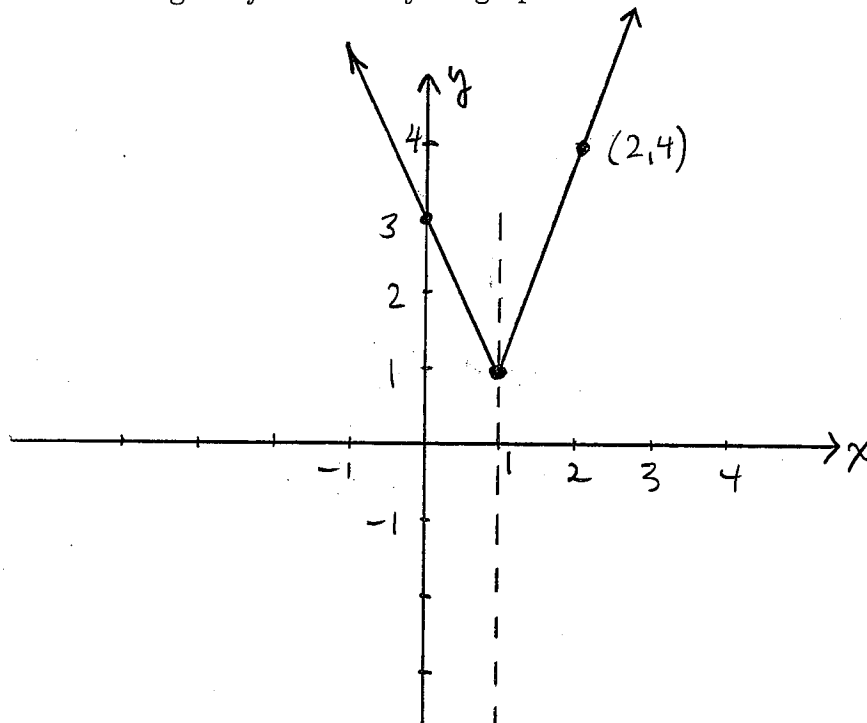


(1) [10 points] Neatly sketch the graph of the function

$$f(x) = \begin{cases} -2x + 3 & \text{if } x < 1 \\ 3x - 2 & \text{if } x \geq 1. \end{cases}$$

and state the domain and range of f based on your graph.

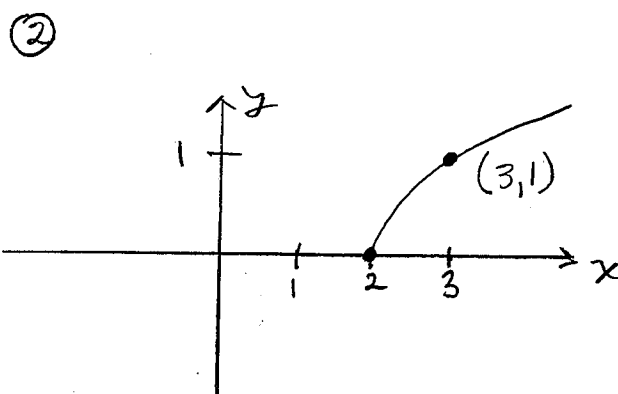
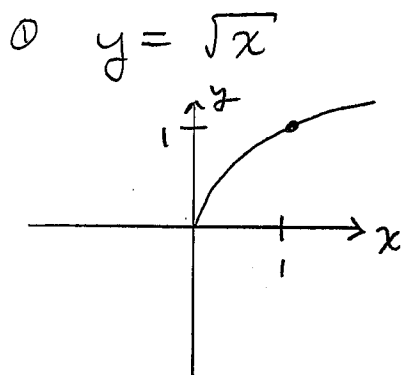


domain : $(-\infty, \infty)$ or all real numbers

range : $[1, \infty)$ or $\{y \mid y \geq 1\}$.

(2) [5 points]

Sketch the graph of $h(x) = \sqrt{x-2}$.



(3) [5 bonus points] Factor completely:

$$\begin{aligned} &12x^2 - 11x - 15 \\ &= 12x^2 + 9x - 20x - 15 \\ &= 3x(4x+3) - 5(4x+3) \\ &= (3x-5)(4x+3). \end{aligned}$$

$$\begin{aligned} (12)(-5) &= -60 \\ &= (9)(-20) \end{aligned}$$