MATH 153 26th Oct 2018 - QUIZ 1

Surname, Name, Student ID and Section: SAMPLE SOLN

1. (7 points) Use formal definition to prove

$$\lim_{x \to 1} 1 - 3x = -2$$

Given $\varepsilon > 0$, choose $\delta = \varepsilon/3$

If $|x-1| < \delta$ then $|1-3x-(2)| = 3|x-1| < 3\delta = \varepsilon$

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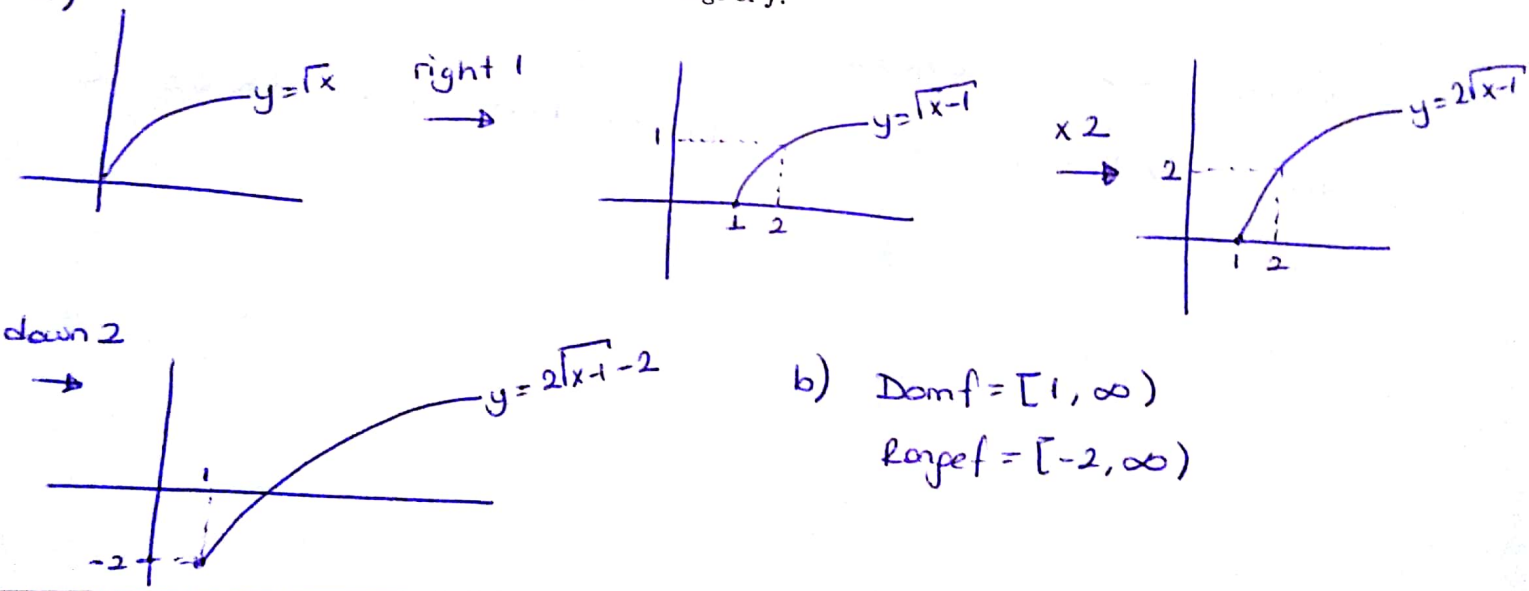
1. (3 points) Let

$$f(x) = 2\sqrt{x-1} - 2$$

(a) (2 points) By scaling and shifting the graph of $y = \sqrt{x}$ sketch the graph of $y = f(x)$.

(b) (1 point) Find the domain and range of f.

a)



b) Domf = $[1, \infty)$

Rangef = $[-2, \infty)$