**Pre-Calculus 40S**
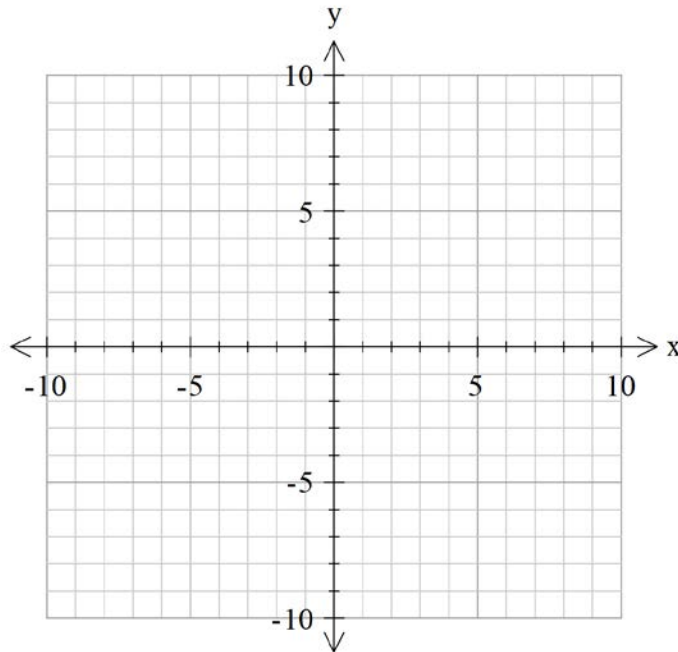**Hand-Assignment 2**                                              **/28 marks**

1. Given $y = -\frac{1}{2}x + 4$.

   a) Sketch the function $y = \sqrt{f(x)}$ on the grid below.                    (3 marks)



   b) State the domain and range of $y = \sqrt{f(x)}$.                    (2 marks)
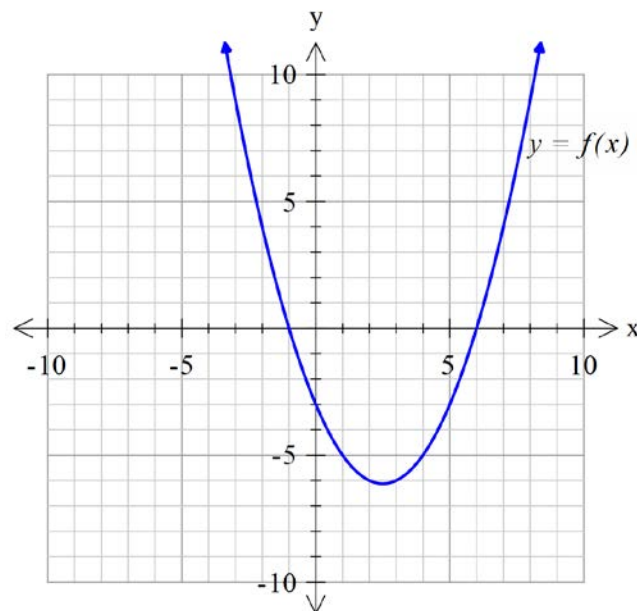
2. For the graph of the quadratic function, $f(x)$ below:

   a) Sketch a graph $y = \sqrt{f(x)}$.                    (3 marks)
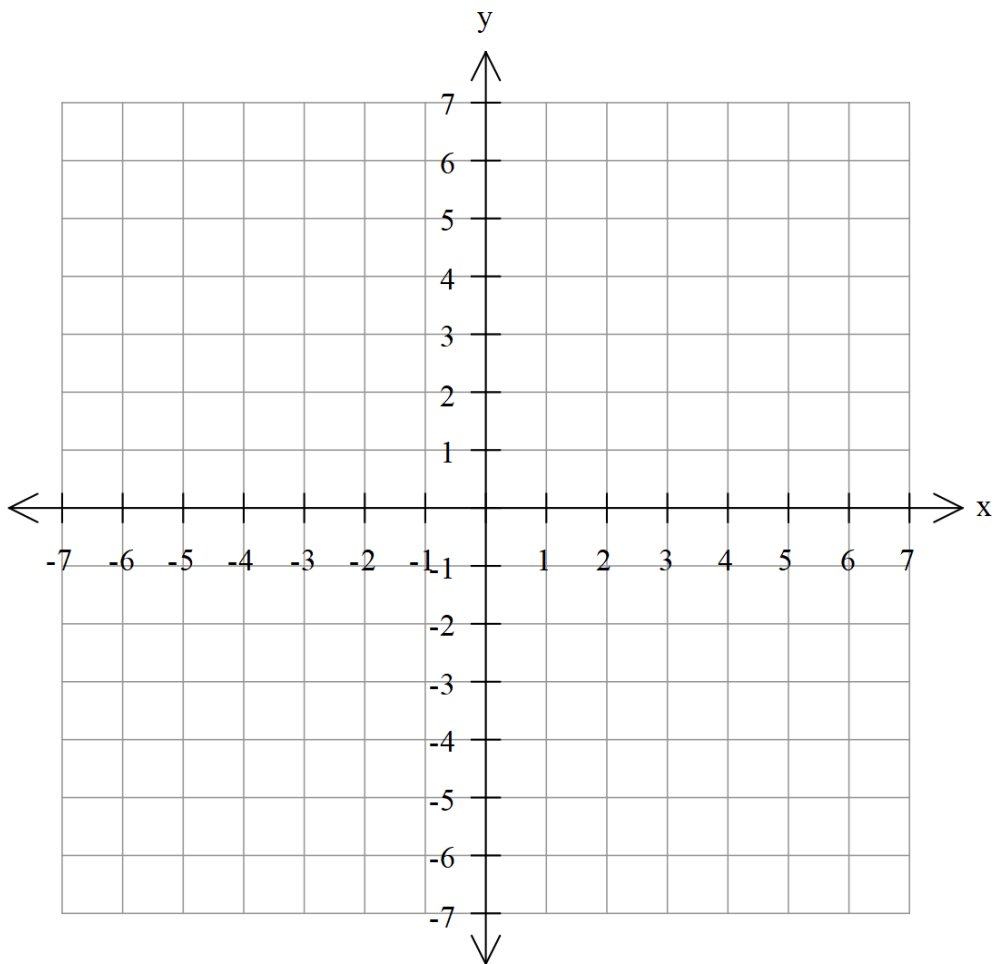   b) State the domain and range of $y = \sqrt{f(x)}$.                    (2 marks)

3. Solve the given radical equation both algebraically and graphically.

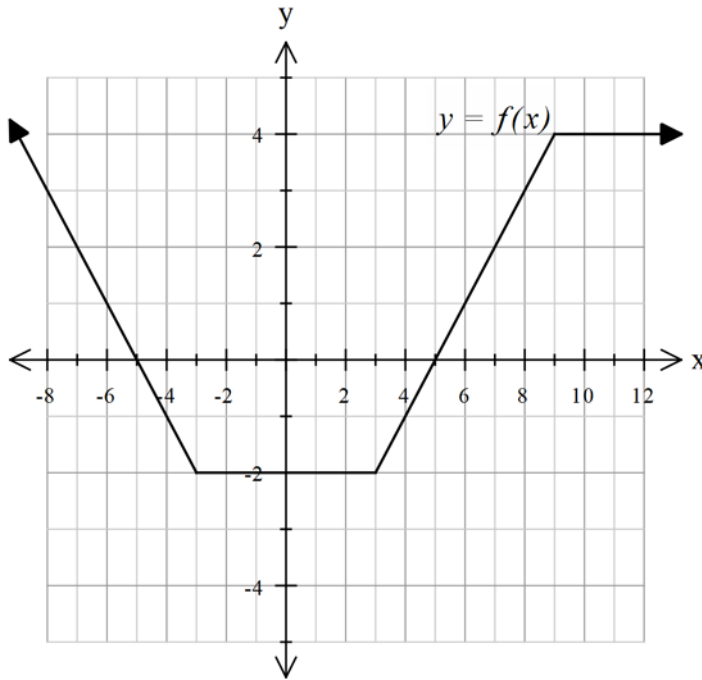   a) Solve $\sqrt{x-1} = x - 3$   algebraically. Verify your solution(s).          (4 marks)

   b) Solve $\sqrt{x-1} = x - 3$ graphically. Show solution on the grid below.          (3 marks)

4. Sketch $y = \sqrt{f(x)}$ for the given graph $y = f(x)$ shown below.                    (3 marks)



5. **Bonus Question:** The point $(-4, 16)$ lies on the graph of $y = f(x)$. Determine the coordinate of its corresponding point on the graph $y = \sqrt{f(x)}$.                    (1 mark)

6. Justify whether $x + 2$ is a factor of $P(x) = 3x^2 - 14x - 40$.            (2 marks)

7. Factor fully. $f(x) = -2x^3 + 3x^2 + 11x - 6$.            (3 marks)

8. Determine the equation for each graph of polynomial function below.            (3 marks)



$y$ Intercept

$\left(0, \dfrac{-3}{4}\right)$