KFUPM, Math 001 Recitation 2.6, Term 141, Answered by Sayed Omar, Page 1/1 04-Dec-14 King Fahd University of Petroleum and Minerals Prep-Year Math Program Math 001 - Term 141 Recitation 2.6

Question 1. If $f(x) = \begin{cases} x^2 & ; x \le 1 \\ 1-2x & ; 1 < x < 4, \text{ sketch the graph of } f(x), \text{ and find} \\ \sqrt{x} & ; x \ge 4 \end{cases}$ Domain of f(x)a) b) Range of f(x)Interval where the function is: i) increasing, ii) decreasing c) f(-1) + f(2) + f(4)d) **Answer:** 4‡y **Answer:** (a): $D_f = (-\infty, \infty)$ 3 **(b):** $R_f = (-7, -1) \cup [0, \infty)$ 2 х (c): (*i*): increasing on [0,1] and on $[4,\infty)$. -3-2--11 <u></u>∆-2-3. 4 5-6 7. 8 9 ÷2 -3 (*ii*): decreasing on $(-\infty, 0]$ and on (1,4). 4 (d): -5 $f(-1) + f(2) + f(4) = (-1)^2 + [1 - 2(2)] + \sqrt{4}$ -6 -7 =1-3+2+8 = 0<u>Question 2:</u> If $f(x) = \left| 1 - \frac{x}{2} \right|$, sketch the graph of f(x) and find a) x - and y - interceptsb) f(-2.4) + f(2.006)**Answer:** 2 (a): $x - \text{int}: \{x \mid 0 < x \le 2\}$ Х v - int: v = 1-5 -4 -3 -2 3 -1 **(b):** f(-2.4) + f(2.006) = 2 - 1 = 1-2--3--4 **Question 3:** If [a,b] is the largest interval on which the function $f(x) = \begin{cases} 4 & ; x \le -1 \\ x^2 & ; -1 < x \le 1, \\ -x + 5 & ; x > 1 \end{cases}$ is increasing, then a + b = -x + 5 = -x + 5 = -1A) 4 B) 1 C) 2 D) 0 E) -1

Answer: **B**) 1

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