

King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math 002 - Term 132
Recitation (4.5)

Question 1:

A) Solve the equation: $\log_3[\log_2(x^2 - 1)] = 1$ **Answer:** $SS = \{-3, 3\}$

B) The sum of all solutions of the logarithmic equation $\log_2 \sqrt{x} = \sqrt{\log_2 x}$ is

- a) $\frac{19}{4}$ b) 19 c) $\frac{15}{4}$ d) 17 e) 15

Question 2: If the line $y = \frac{26}{27}$ intersects the graph $y = -3^{x-2} + 1$ at the point (x_1, y_1) , then $x_1 + y_1 =$

- A) $\frac{28}{27}$ B) $-\frac{5}{27}$ C) $-\frac{23}{27}$ D) $-\frac{7}{27}$ E) $-\frac{1}{27}$

Question 3: Solve the following equations:

(a): $\frac{10^x - 10^{-x}}{3} = 2$ **Answer:** $SS = \{\log(3 + \sqrt{10})\}$

(b): If $x = e^{(-\ln 3 + 2\ln 5)}$ and $y = \ln \sqrt[4]{e^5}$, then $x + y =$

- A) $\frac{115}{12}$ B) $\frac{101}{12}$ C) $\frac{30}{7}$ D) $\frac{100}{11}$ E) $\frac{100}{17}$

Question 4: The sum of all solutions of the equation $[\log_2(x + 3)]^2 = 4\log_2(x + 3)$ is

- (a):** 6 **(b):** 11 **(c):** 13 **(d):** 5 **(e):** 4

Question 5: The solution set of the equation $2^x - 6(2^{-x}) = 6$ consists of:

- (a):** Two solutions only one positive and one negative.
(b): One solution only and it is greater than 2.
(c): One solution only and it is less than 2.
(d): No solution
(e): Two positive solutions