

King Fahd University of Petroleum and Minerals

Prep-Year Math Program

Math 002 - Term 151

Recitation (4.5)

**Question1:** Solve the equation:  $\log_3 \left[ \log_2 (x^2 - 1) \right] = 1$

**Answer:**  $SS = \{-3, 3\}$

**Question2:** Solve the following equations:

a)  $\log_5 (x - 20) - \log_5 \left( \frac{1}{x} \right) = 3$

b)  $9^x - 2(3)^{x+1} = 27$

c)  $2 \ln x - \ln 2 = \ln \left( 2x + \frac{5}{2} \right)$

**Answer:** (a):  $SS = \{25\}$       (b):  $SS = \{2\}$       (c):  $SS = \{5\}$

**Question3:**

The solution of the equation  $2^{2x-3} = 5^{1-x}$  is:

- A)  $\log_{20} 40$
- B)  $\log 2$
- C)  $2$
- D)  $\log_4 8$
- E)  $\log_8 20$

**Answer:** (A):  $\ln_{20} 40$

**Question4:**

If  $2^{x+1} = 3^{2x-1}$  then  $x =$

**Answer:**  $\ln_{\frac{9}{2}} 6$

**Question5:**

The sum of all solutions of the equation  $e^x + 6e^{-x} - 5 = 0$  is

- a)  $\ln 6$       b)  $\ln \frac{3}{2}$       c)  $0$       d)  $\ln 5$       e)  $\frac{5}{2}$

**Answer:**  $\ln 6$