King Fahd University of Petroleum and Minerals
Prep-Year Math Program
Math (001)-Term (131)
Recitation R.5

Question 1: $\dfrac{3p-4q}{(2p+q)(p-5q)}-\dfrac{3p-2q}{6p^2-pq-2q^2}=$

A) $\dfrac{1}{p-5q}$ B) $\dfrac{1}{2p+q}$ C) $-2q$ D) $3p-6q$ E) $5p-q$

Question 2: $\dfrac{\dfrac{3}{x^2-16}+x}{\dfrac{1}{x-4}}=$

A) $\dfrac{x^3-16x+3}{x+4}$ B) $\dfrac{1-x}{x-4}$ C) $-x(x+4)$ D) $\dfrac{1-x}{x+4}$ E) $\dfrac{-x^3+16x-2}{x-4}$

Question 3: Simplify the following:

$(a)\dfrac{x}{x^2+3x+2}+\dfrac{3x-3}{x^2-1}$ $(b)\dfrac{x}{x+5}+\dfrac{x}{x-4}\div\dfrac{x+2}{x^2-x-12}$

$(c)\ 2+\dfrac{1}{2+\dfrac{1}{1+\dfrac{1}{x}}}$ $(d)\ \dfrac{\dfrac{x^2}{x-4}+2}{\dfrac{2x-2}{x}-1}$

Answer: **(a):** $=\dfrac{2(2x+3)}{(x+1)(x+2)}$ **(b):** $=\dfrac{x(x^2+9x+17)}{(x+5)(x+2)}$

(c): $=\dfrac{7x+5}{3x+2}$ **(d):** $=\dfrac{x(x+4)}{x-4}$

Question 4:

The expression $\left(1-\dfrac{4xy}{x^2+2xy+y^2}\right)\div\left(1+\dfrac{4xy}{x^2-2xy+y^2}\right)$ simplifies to

$(a)1$ $(b)x-y$ $(c)\left(\dfrac{x-y}{x+y}\right)^4$

$(d)x+y$ $(e)\left(\dfrac{x+y}{x-y}\right)^4$