**King Fahd University of Petroleum and Minerals**
**Prep-Year Math Program**
**Math (001)-Term (141)**
**Recitation (1. 7)**

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## Question 1:

The solution set, in interval notion, o the inequality $x^3+3x^2-16x\le 48$ is

A) $(-\infty,-3]\cup[4,\infty)$ B) $[-3,\infty)$ C) $[-4,-3]\cup[4,\infty)$ D) $(-\infty,-4]$

E) $(-\infty,-4]\cup[-3,4]$

**Answer:** $SS=(-\infty,-4]\cup[-3,4]$

## Question 2: Find the solution set, in interval notation, of the following inequalities:

(a) $-2<\dfrac{2x-3}{3}\le 1$ $\quad SS=\left(-\dfrac{3}{2},3\right]$

(b) $\dfrac{(2-x)(x+3)^4}{(x-5)^3}\le 0$ $\quad SS=(-\infty,2]\cup(5,\infty)$

(c) $\dfrac{3x+1}{2x-3}<4$ $\quad SS=\left(-\infty,\dfrac{3}{2}\right)\cup\left(\dfrac{13}{5},\infty\right)$

## Question 3:

Find the values of $k$ for which the equation $2x^2-\sqrt{3}x+2k=\dfrac{1}{4}$ has no real solutions.

**Answer:** $k\in\left(\dfrac{5}{16},\infty\right)$

## Question 4:

The solution set of the inequality $\dfrac{1}{x^2+2x-3}\le\dfrac{3}{x+3}$ *is*

$(a)(-1,3)$ $(b)(-3,\infty)$ $(c)(-3,1)$

$(b)(-1,3)\cup\left[\dfrac{4}{3},\infty\right)$ $(e)(-3,1)\cup\left[\dfrac{4}{3},\infty\right)$

**Answer:** $SS=(-3,1)\cup\left[\dfrac{4}{3},\infty\right)$