

**King Fahd University of Petroleum and Minerals**  
**Prep-Year Math Program**  
**Math (001)-Term (141)**  
**Recitation R3**

**Question 1:**

If  $\frac{4x^3 - 3x^2 + x + 1}{x + 2} = 4x^2 + mx + 23 + \frac{n}{x + 2}$  find  $m$  and  $n$ .

**Answer:**  $m = -11$  ,  $n = -45$

**Question 2:**

Given the polynomial  $f(x) = (3x^2 - 2)^2 - (2x^2 - x - 3)(2x^2 - x + 3)$ .

Write  $f(x)$  in standard form.

Write down the following:

The leading coefficient	The constant Term	The coefficient of $x^2$	Degree

**Answer:**

**Standard form:**  $f(x) = 5x^4 + 4x^3 - 13x^2 + 13$

The leading coefficient	The constant Term	The coefficient of $x^2$	Degree
<b>5</b>	<b>13</b>	<b>-13</b>	<b>4</b>

**Question 3:**

If the **Sum** of the coefficients of  $x^3$  and  $x^2$  in the product

$(x^2 - 2x + p)(x^2 + kx - 2)$  is  $-3$  then  $p - k$  is equal to

- (a)  $-3$                       (b)  $-4$                       (c)  $-1$   
 (d)  $1$                         (e)  $9$

**Answer: (d): 1**

**Question 4:**

Which of the following is a polynomial

- (a)  $x^2 - 2x + 2x^{-2}$                       (b)  $\frac{x^3 + 5}{x - 1}$   
 (c)  $\sqrt{5}x^5 - 4x^3 + \frac{1}{3}x - \sqrt{2}$                       (d)  $4 - \sqrt{9 + x^2}$   
 (e)  $x + \sqrt{x}$

**Answer:** (a): No              (b): No              (c): Yes              (d): No              (e): No