

**King Fahd University of Petroleum and Minerals**  
**Prep-Year Math Program**  
**Math 001 - Term 061**  
**Recitation Hour (P3 & P4)**

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**Question1**

Given the polynomial  $(2x-1)(2-x) + (3x-1)^3 = 27x^3 - 29x^2 + 8x - 3$

a. Write the given polynomial in the standard form.

b. Complete the following table:

The leading coefficient is	The constant term is	The coefficient of is $x^2$
27	-3	-29

**Question2**

Factor each of the following trinomial

a)  $x^2 - 10x - 24 = (x-12)(x+2)$

b)  $51x^2 - 5x - 4 = (17x+4)(3x-1)$

**Question3**

Factor completely

a)  $x^6 + 63x^3 - 64 = (x^3 - 1)(x^3 + 64) = (x-1)(x^2 + x + 1)(x+4)(x^2 - 4x + 16)$

b)  $6x(3x+1)^3 - (3x+1)^4 = (3x+1)^3(2x-1)$

**Question4**

Factor by grouping

a)  $9x^2 + 3x - y - y^2 = (3x - y)(3x + y + 1)$

b)  $36x^2 - y^2 - 4yz - 4z^2 = (6x - y - 2z)(6x + y + 2z)$

**Question5**

Find all positive values of  $k$  such that  $4x^2 - 12xy + ky^2$  is a perfect-square trinomial.

$k = 9$