1- Determine which is of the following is polynomial or not polynomial. (Circle your answer).

a) $5x^4 + x^2 + \sqrt{5}$ (polynomial) or not polynomial   (1 Mark)

b) $\dfrac{x}{5} - \dfrac{6}{x}$ polynomial or (not polynomial)   (1 Mark)

2- Perform the following operations

a) $(x^4 - 2x^2 + 3x - 5) - (x^3 + 5x^2 + 4x + 2)$ (1 mark)

$(x^4 - 2x^2 + 3x - 5) (-x^3 + 5x^2 - 4x + 2)$

$(x^4 - x^3 + 3x^2 - x - 3)$

b) $(x + 4)(x^3 - 4)$ (3 marks)

$x^4 - 4x + 4x^3 - 16$

3- Factor $36x^2 - 100$ $= (a+b)(a-b)$ (1 mark)

$(6x - 10)(6x + 10)$ (2 marks)

4- Factor $x^2 + 5x + 6$

$(x + 3)(x + 2)$ (1 mark)

5- Factor $5x^2 + 10x^7 + 25x^{10}$

$5x^2(1 + 2x^5 + 5x^8)$

$(2x^5 + 5x^9)$

Group Number ( )	Time: 15 min.	Date:
Math 130	Quiz (3)	
Name:	ID Number:	

1- Write each of the following intervals in inequality notation and graph into the real number line   (3 marks)

a- $(-\infty, 0]$ $x \leq 0$
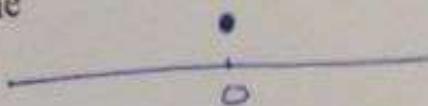
b- $(-2, \infty)$ $x > -2$

2- Perform $\dfrac{(x^2 - 2x - 8)}{5x} \times \dfrac{(x^2 - 2x)}{(x^2 - 4)}$ (3 marks)

3- The sum of four consecutive even integers is 492. What are the integers?   (2 marks)

4- **Solve** each of the following inequality for x: (2 marks)

$6x + 14 \geq 4x + 12$

1- Determine which is of the following is polynomial or not polynomial. (Circle your answer).

a) $x^2 + 3x^4 + 7x - 5$ polynomial or not polynomial   (1 mark)

b) $\sqrt{x+1}$ polynomial or not polynomial   (1 mark)

2- Perform the following operations

a) $(5x^5 + 8x^3) - (4x^3 - x^2)$ (1 mark)

$5x^5 + 8x^3 - 4x^3 + x^2$

$5x^5 + 4x^3 + x^2$

b) $(x-5)(x^2+3)$ (3 marks)

$x^3 + 3x - 5x^2 - 15$

$x^3 - 5x^2 + 3x - 15$

3- Factor $25 - 9x^2$ (1 mark)

$(3x+5)(3x-5)$

4- Factor $x^2 - 5x - 14$ (2 marks)

$(x+2)(x-7)$

5- Factor $x^5 + 4x^4 - 6x^3$ (1 mark)

$x^3(x^2 + 4x - 6)$

1- Determine the domain and the range for each of the following relations, and Determine whether it represents a **function** or not.

(3 marks)

- $f = \{(2,3),(2,5),(1,4),(4,6)\}$ not Function

  Domain $= \{2,2,1,4\}$
  range $= \{3,5,4,6\}$
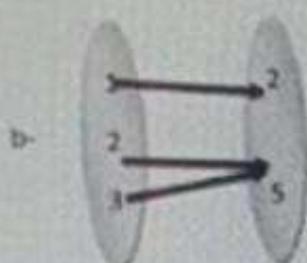
b-

Function
Domain $= \{1,2,3\}$
range $= \{2,5\}$

2- Consider the linear function $g(x) = 2x+6$. $(\infty, -\infty)$ (4 marks)

a. Find the domain and the range of $g(x)$.

Domain: $(-\infty, \infty)$

Range: $(-\infty, \infty)$

b. Find the slope for the graph of $g(x)$.
Slope = 2

c. Find the intercepts of $g(x)$.

X-intercept $\Leftarrow 2x+6 = 0$ $\dfrac{2x}{2} = \dfrac{-6}{2} = \boxed{-3}$

y-intercept $2(0)+6 = \boxed{6}$ $\left(\dfrac{\pi}{4}\left(\dfrac{180}{\pi}\right) = 45°\right)$

3- a- Convert from radians to degrees $(\frac{\pi}{4})$ (3 marks)
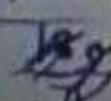
b- Find the complement and supplement of the angle (30°)

$30° + x = 90°$
$x = 90° - 30°$
$x = 60°$

Standard form	degree	Leading coefficient	Constant term
$x + 3x^2 - 1$			
$3x^2 + x - 1$		-1	-1

(2 marks)

2- Perform the following operations

a) $(x^3 - 2x + 3) - (x^2 + 4x - 5)$

$x^3 - 2x + 3 - x^2 + 4x - 5$

b) $(x^3 + x^2) + (3x - 9x) + (3 - 4) =$

$(5x - 3)^2$

(2 marks)

3- Factor each of the following

a- $4x^2 - 36$

$(x - 6)(x + 6x)$

b- $x^2 - 9x - 10$

$(x + 10)$

$(x - 1)$

(2 marks)