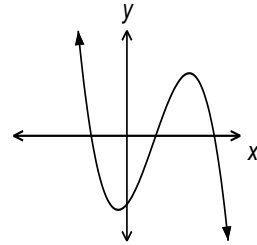


Part I: Circle the letter of the correct answer. (15 marks)

1. What is the y-intercept of $f(x) = 4x^3 + 2x^2 - 5x - 3$?
A) -3 B) 0 C) 3 D) 4
2. What is the constant term of: $f(x) = 5x^3 - 2x^2 + 7$?
A) -2 B) 0 C) 5 D) 7
3. From which quadrants does the graph of $f(x) = 4x^3 - x^2 + 5x - 1$ extend?
A) II to I B) III to I C) II to IV D) III to IV

4. Describe the characteristics of the function shown.

- A) Positive leading coefficient, extends from Q III to Q I
B) Positive leading coefficient, extends from Q II to Q IV
C) Negative leading coefficient, extends from Q III to Q I
D) Negative leading coefficient, extends from Q II to Q IV



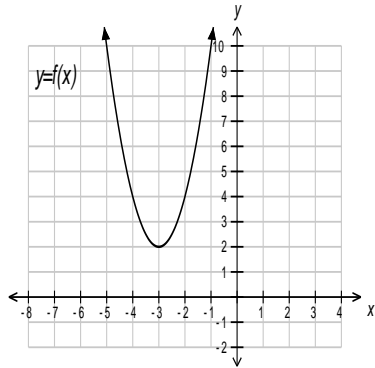
5. What is the leading coefficient of the polynomial: $f(x) = -2x^3 - 8x + 5$?
A) -8 B) -2 C) 2 D) 5
6. Which function passes through the point $(1, -7)$?
A) $f(x) = -x^3 - 3x^2 + x - 4$ B) $f(x) = -x^3 - 2x^2 + x - 7$
C) $f(x) = x^3 + 2x^2 - 4$ D) $f(x) = x^3 + 3x^2 - 7$
7. How many possible x-intercepts can $f(x) = 2x^3 + 8x^2 - 1$ have?
A) 0 B) 0, 1, or 2 C) 0, 1, 2, or 3 D) 1, 2, or 3
8. What is the degree of the polynomial $y = 4x^3 - 5x^2 + 3x - 1$?
A) 1 B) 2 C) 3 D) 4
9. What is the end behavior of the graph of: $f(x) = -5x^2 + 2x - 1$?
A) Q2 to Q1 B) Q3 to Q1 C) Q2 to Q4 D) Q3 to Q4

10. How many turning points can a cubic polynomial have?

- A) 0, 1, or 2 B) 1, 2, or 3 C) 0 or 2 D) 2

11. What is the range of the function shown?

- A) $\{y|y \leq -2, y \in R\}$
 B) $\{y|y \geq -2, y \in R\}$
 C) $\{y|y \leq 2, y \in R\}$
 D) $\{y|y \geq 2, y \in R\}$



12. What is the maximum number of x-intercepts that a polynomial function, of degree 3, can have?

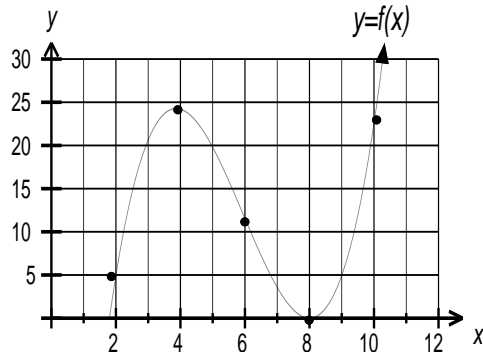
- A) 0 B) 1 C) 2 D) 3

13. What is the range of $f(x) = -2x + 5$?

- A) $\{x|x \in R\}$ B) $\{y|y \leq 5, y \in R\}$
 C) $\{y|y \in R\}$ D) $\{y|y \geq 5, y \in R\}$

14. Given the table, the scatter plot and the curve of best fit of the polynomial $f(x)$, what is the value of $f(5)$?

x	y
2	5
4	24
6	12
8	0
10	23



- A) 2 B) 9 C) 18 D) 20

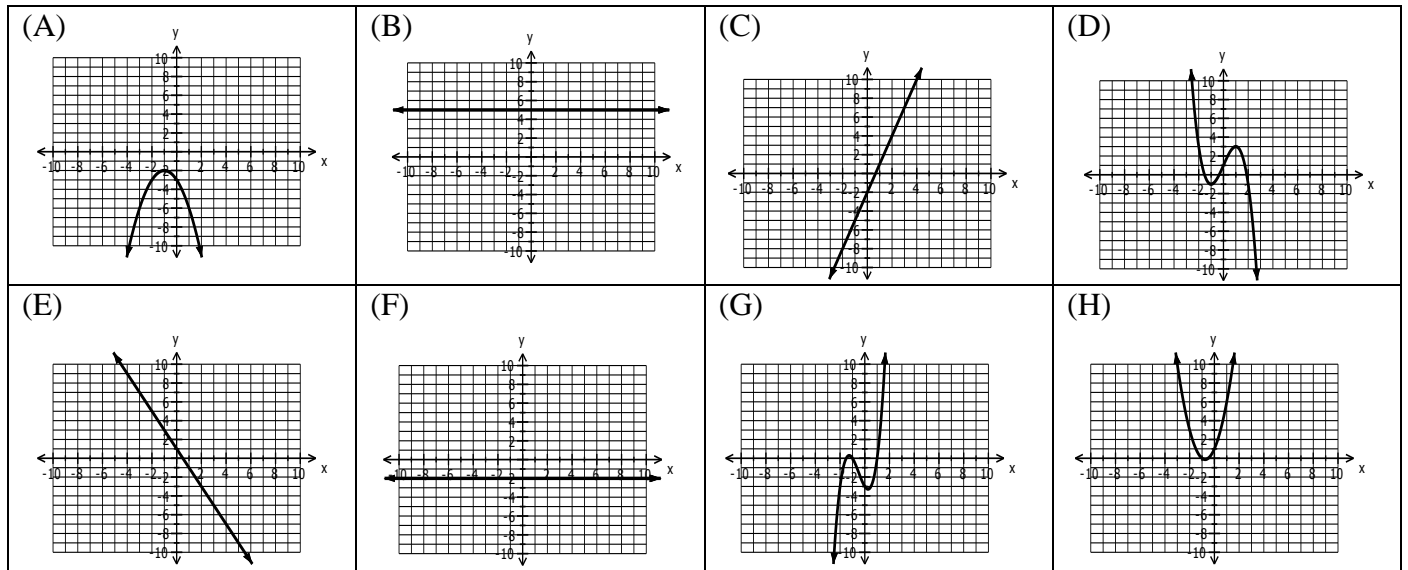
15. Which equation **DOES NOT** represent a polynomial function?

- A) $f(x) = 3^x$ B) $f(x) = -2x + 1$
 C) $f(x) = 3x^2$ D) $f(x) = 3x^3 - 2x^2 + 3x - 2$

Part II: Complete each question in the space provided. (17 marks)

1. Match each polynomial function with its graph below. (4 marks)

$f(x) = -2$	Graph:	$f(x) = 5$	Graph:
$f(x) = -2x + 1$	Graph:	$f(x) = 3x - 2$	Graph:
$f(x) = 2x^2 + 3x + 1$	Graph:	$f(x) = -x^2 - 2x - 3$	Graph:
$f(x) = -x^3 + 3x + 1$	Graph:	$f(x) = 2x^3 + 3x^2 - 2x - 3$	Graph:



2. Determine the following characteristics of each function: (6 marks)

Characteristics	$f(x) = 3x^3 - 4x^2 + 2x - 1$	$f(x) = -(x+2)^2 - 5$
Max number x -intercepts		
y -intercept		
Domain		
Range		
Max number of turning points		
End behaviour		

3. Determine the following characteristics for the following polynomials: (7 marks)

Characteristics		
Degree		
Sign of Leading Coefficient		
Constant term of function		
End behaviour		
y -intercept		
Domain		
Range		