ONTARIO ADVANCED FUNCTIONS, GRADE 12, UNIVERSITY PREPARATION (MHF4U) · UNIT A · 25 QUESTIONS

Polynomial and Rational Functions — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 For the polynomial $P(x) = x^3 - 2x$ the value of $P(2)$ is

- **A** 8
- **B** 6
- **C** 0
- **D** 4

Understand It with Pulse | Flag a mistake

2 **The degree of y = (x - 1)(x + 2)(x - 3) is**

A 3

B 2

C 4

D 1

Understand It with Pulse | Flag a mistake

3 **The function y = x - 2/x - 2 has a hole or an asymptote at x equal to**

A 2

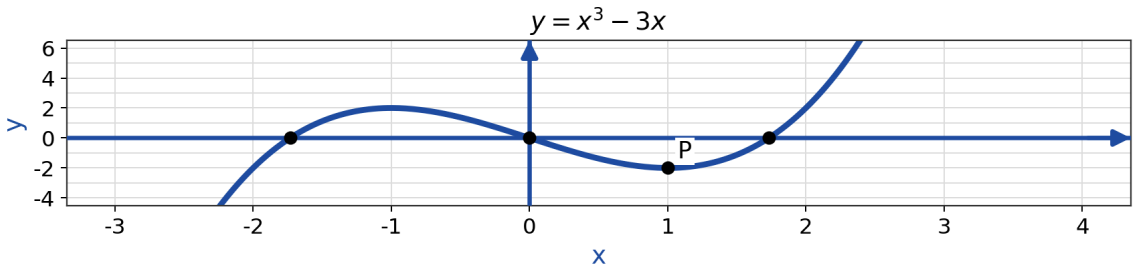
B 3

C -2

D 0

Understand It with Pulse | Flag a mistake

4 **The graph shows a polynomial function. The marked point is a local minimum or maximum? The value at the marked point is Figure 1**



A 0

B -4

C -2

D 9

Understand It with Pulse | Flag a mistake

5 **The horizontal asymptote of y = 3x/x - 2 is y equal to**

A 3

B 0

C 2

D 1

Understand It with Pulse | Flag a mistake

6 **If x + 2 is a factor of a polynomial P, then P(-2) equals The root is negative.**

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

Understand It with Pulse | Flag a mistake

7 **If x - 2 is a factor of a polynomial P, then P(2) equals The root is positive.**

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

Understand It with Pulse | Flag a mistake

8 **The vertical asymptote of y = 1/x - 2 is x equal to**

A 3

B 2

C -2

D 0

Understand It with Pulse | Flag a mistake

9 **As x approaches positive infinity, the graph of $y = -x^3$ approaches**

A positive infinity

B zero

C one

D negative infinity

Understand It with Pulse | Flag a mistake

10 **The leading coefficient of $y = 3x^3 - x + 2$ is**

- **A** 4
- **B** 14
- **C** 1
- **D** 3

Understand It with Pulse | Flag a mistake

11 **The zeros of $y = (x - 2)(x + 1)$ are**

- **A** $x = 2, x = 1$
- **B** $x = -2, x = -1$
- **C** $x = 2, x = -1$
- **D** $x = 1, x = -1$

Understand It with Pulse | Flag a mistake

12 When P(x) = $x^2 + 1x + 2$ is divided by x - 1 the remainder is

- A 3
- B 5
- C 4
- D 2

Understand It with Pulse | Flag a mistake

13 For the polynomial P(x) = $x^3 - 3x$ the value of P(2) is

- A 2
- B 8
- C 4
- D 0

Understand It with Pulse | Flag a mistake

14 **The degree of y = (x - 2)(x + 2)(x - 3) is**

A 2

B 3

C 4

D 1

Understand It with Pulse | Flag a mistake

15 **The function y = x - 3/x - 3 has a hole or an asymptote at x equal to**

A 4

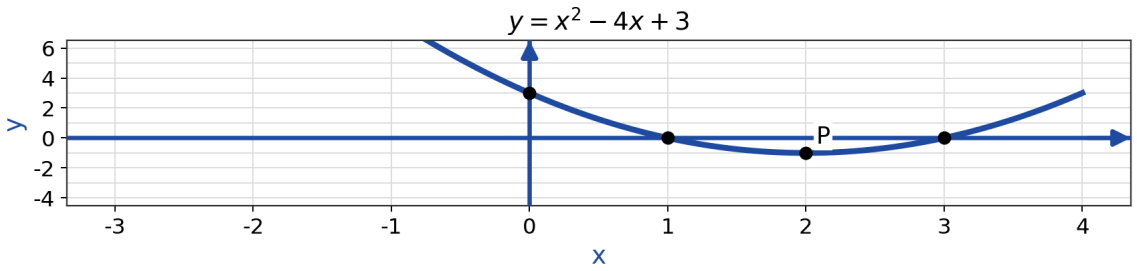
B -3

C 3

D 0

Understand It with Pulse | Flag a mistake

16 **The graph shows a polynomial function. The marked point is a local minimum or maximum? The value at the marked point is Figure 2**



A 1

B -3

C -1

D 0

Understand It with Pulse | Flag a mistake

17 **The horizontal asymptote of y = 3x/x - 3 is y equal to**

A 0

B 3

C 14

D 1

Understand It with Pulse | Flag a mistake

18 **If x + 3 is a factor of a polynomial P, then P(-3) equals The root is negative.**

A 0

B 1

C -3

D 3

Understand It with Pulse | Flag a mistake

19 **If x - 3 is a factor of a polynomial P, then P(3) equals The root is positive.**

A 1

B 0

C 3

D -3

Understand It with Pulse | Flag a mistake

20 The vertical asymptote of y = 1/x - 3 is x equal to

- A 4
- B -3
- C 3
- D 0

Understand It with Pulse | Flag a mistake

21 For the polynomial $P(x) = x^3 - 4x$ the value of P(2) is

- A 8
- B 0
- C 2
- D 11

Understand It with Pulse | Flag a mistake

22 **The degree of y = (x - 3)(x + 2)(x - 3) is**

A 2

B 4

C 3

D 1

Understand It with Pulse | Flag a mistake

23 **The function y = x - 4/x - 4 has a hole or an asymptote at x equal to**

A 4

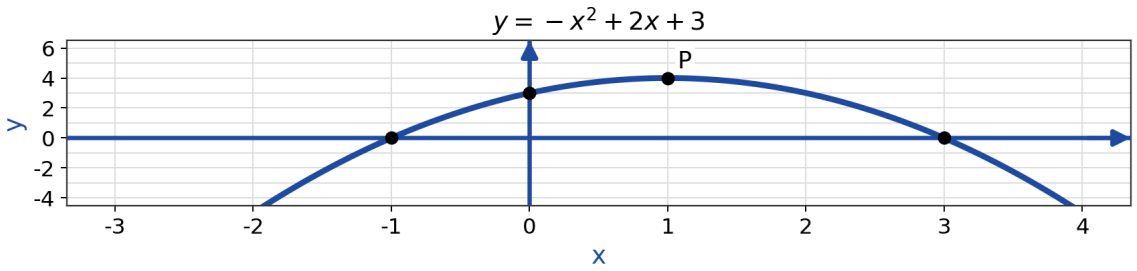
B 5

C -4

D 0

Understand It with Pulse | Flag a mistake

24 **The graph shows a polynomial function. The marked point is a local minimum or maximum? The value at the marked point is Figure 3**



- **A** 6
- **B** 2
- **C** 4
- **D** 0

Understand It with Pulse | Flag a mistake

25 **The horizontal asymptote of y = 3x/x - 4 is y equal to**

- **A** 0
- **B** 4
- **C** 3
- **D** 1

Understand It with Pulse | Flag a mistake

ANSWER KEY

1.	D	**10.**	D	**19.**	B
2.	A	**11.**	C	**20.**	C
3.	A	**12.**	C	**21.**	B
4.	C	**13.**	A	**22.**	C
5.	A	**14.**	B	**23.**	A
6.	C	**15.**	C	**24.**	C
7.	D	**16.**	C	**25.**	C
8.	B	**17.**	B		
9.	D	**18.**	A		

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