BRITISH COLUMBIA PRE-CALCULUS 12 (MPREC12) · UNIT D · 25 QUESTIONS

Sequences, Series 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 **The next term of 3, 6, 12, 24, … is**



A 48

B 36

C 30

D 42

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2

For $a_n = 3 \cdot 2^{n-1}$, the 5th term is

ANSWER

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3 The common ratio of 81, 27, 9, 3, … is



A -3

B 3

C $\frac{1}{3}$

D 9

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4 **The sum 2 + 4 + 8 + 16 is**

ANSWER _____

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5 **The sum 1 + 2 + 4 + 8 + 16 + 32 + 64 is**



A 128

B 126

C 127

D 64

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6 The infinite sum $16 + 8 + 4 + 2 + \cdots$ is

- **A** 64
- **B** 30
- **C** 16
- **D** 32

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7 The infinite sum $9 + 3 + 1 + \cdots$ is

ANSWER _____

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8 **The infinite geometric series with ratio 2**

- A sums to 0
- B sums to 1
- C sums to 2
- D diverges

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9 **The vertical asymptote of $y = \frac{1}{x - 3}$ is**

- A y = 0
- B x = -3
- C y = 3
- D x = 3

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10 The horizontal asymptote of $y = \frac{2x + 1}{x - 4}$ is

- **A** y = -4
- **B** y = 1
- **C** y = 2
- **D** y = 0

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11 The horizontal asymptote of $y = \frac{1}{x + 2}$ is

- **A** y = 0
- **B** y = 1
- **C** y = -2
- **D** x = -2

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12 The domain of $y = \frac{x}{x^2 - 9}$ excludes

- **A** $x = 0$
- **B** $x = 3$ and $x = -3$
- **C** $x = 9$
- **D** $x = 3$

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13 Simplified, $\frac{x^2 - 9}{x - 3}$ equals (for $x \neq 3$)

- **A** $x + 3$
- **B** $x - 3$
- **C** $x + 9$
- **D** $x - 9$

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14 The solution of $\frac{1}{x} = 4$ is

- **A** $x = 2$
- **B** $x = 4$
- **C** $x = -4$
- **D** $x = \frac{1}{4}$

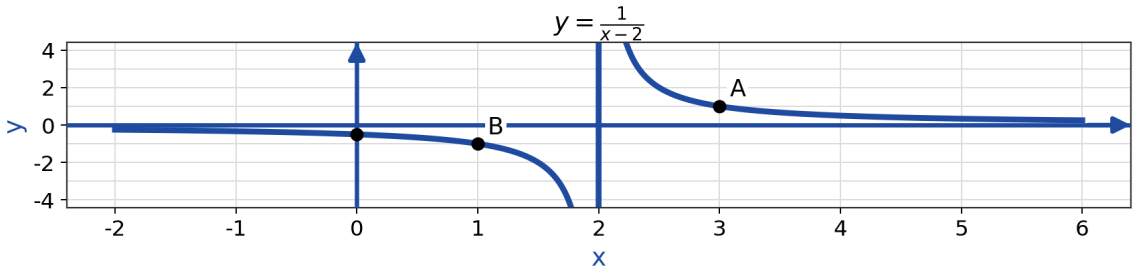
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15 The solution of $\frac{x}{x - 1} = 2$ is

- **A** $x = 1$
- **B** $x = 2$
- **C** $x = -2$
- **D** $x = 0$

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16 **The graph shows $y = \frac{1}{x - 2}$, with points A and B. The vertical asymptote of this graph is**



A x = 2

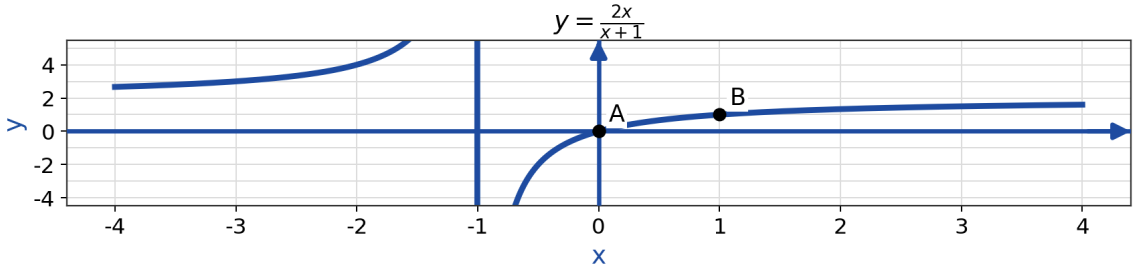
B x = -2

C y = 0

D y = 2

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17 **The graph shows $y = \frac{2x}{x+1}$, with points A and B. The horizontal asymptote of this graph is**



A y = 1

B y = 2

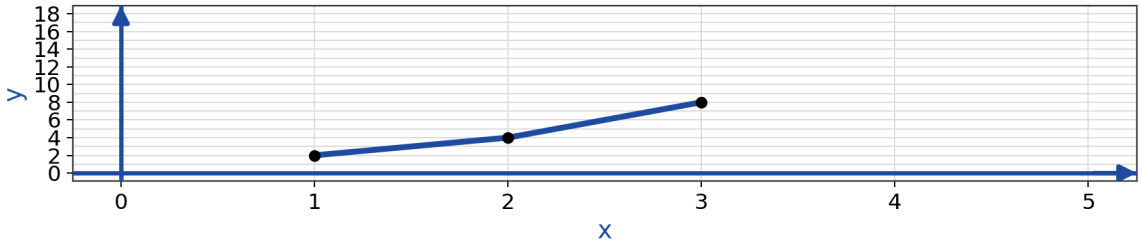
C y = 0

D y = -1

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18 **The points (1, 2), (2, 4), (3, 8) lie on a geometric pattern. The next point in the pattern is**



A (4, 14)

B (4, 12)

C (4, 10)

D (4, 16)

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19 **The 3rd term of 5, 10, 20, … is**



A 15

B 20

C 40

D 25

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20 **The sum of the first 4 terms of 3, 6, 12, … is**

A 45

B 36

C 24

D 48

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21 **An infinite geometric series with a = 20 and r = $\frac{1}{2}$ sums to**



ANSWER

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22 The vertical asymptote of $y = \frac{3}{x + 5}$ is

- **A** y = -5
- **B** x = 5
- **C** x = -5
- **D** y = 0

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23 The x-intercept of $y = \frac{x - 4}{x + 2}$ is

- **A** x = -2
- **B** x = 4
- **C** x = 2
- **D** x = -4

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24 **The solution of $\frac{2}{x} = 5$ is**

A $x = \frac{2}{5}$

B $x = 5$

C $x = \frac{5}{2}$

D $x = 10$

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25 **A ball bounces to half its height each time. Starting at 8 metres, the infinite total distance up and down is**



A 32 metres

B 16 metres

C 24 metres

D 12 metres

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ANSWER KEY

1.	A	**10.**	C	**19.**	B
2.	48	**11.**	A	**20.**	A
3.	C	**12.**	B	**21.**	40
4.	30	**13.**	A	**22.**	C
5.	C	**14.**	D	**23.**	B
6.	D	**15.**	B	**24.**	A
7.	13.5	**16.**	A	**25.**	C
8.	D	**17.**	B		
9.	D	**18.**	D		

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