POLYNOMIAL, RECIPROCAL, AND RATIONAL FUNCTIONS - PRACTICE TEST | NEW BRUNSWICK PRE-CALCULUS B 120 · UNIT B · 25 QUESTIONS

Polynomial, Reciprocal, 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 graph of $y = \frac{1}{x}$ has a horizontal asymptote at**

Question 1

The graph *of* $y = 1 / x$ *has a* horizontal asymptote *at*

A) $y = 0$

B) $x = 0$

C) $y = 1$

D) $y = 2$

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

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2 The graph of y = 3 / (x + 1) has a horizontal asymptote at

Question 2

The graph of $y = 3 / (x + 1)$ has *a* horizontal asymptote at

A) $x = 0$

B) $y = 0$

C) $y = 1$

D) $y = 2$

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

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3 For the polynomial f(x) = x² + 4x + 1 , the value of f(3) is

ANSWER _____

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4 For the polynomial f(x) = x² + 2x -5 , the value of f(3) is

ANSWER _____

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5 **For the polynomial $f(x) = x^2 + 5x + 2$, the value of $f(3)$ is**

ANSWER _____

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6 **The polynomial $(x - 2)(x + 3)$ has roots at $x = 2$ and $x =$**

ANSWER _____

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7 **The polynomial (x minus 2) times (x plus 1) has a root at x equals**

ANSWER _____

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8 **The polynomial (x minus 3) times (x plus 1) has a root at x equals**

ANSWER _____

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9 **The polynomial (x minus 4) times (x plus 1) has a root at x equals**

ANSWER _____

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10 **If x = 4 is a root of a polynomial, then a factor of the polynomial is**

A x - 4

B x + 4

C x - 2

D 4x

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11 **The polynomial $x^2 - 9$ has roots at x =**

- **A** 3 and -3
- **B** 3 only
- **C** -3 only
- **D** 9 and -9

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12 **The rational function 1/(x - 5) has a vertical asymptote at x =**

ANSWER _____

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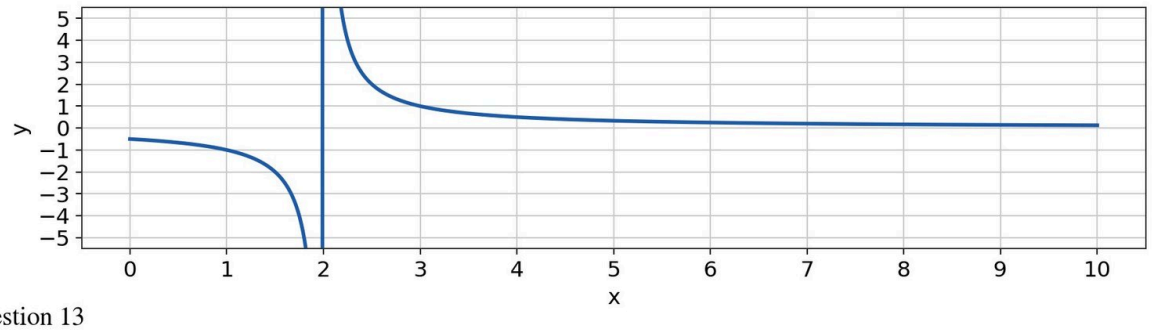
13 The graph shows a rational function. The vertical asymptote is at x =



Question 13

The graph shows a rational function. The vertical asymptote is at x =

ANSWER

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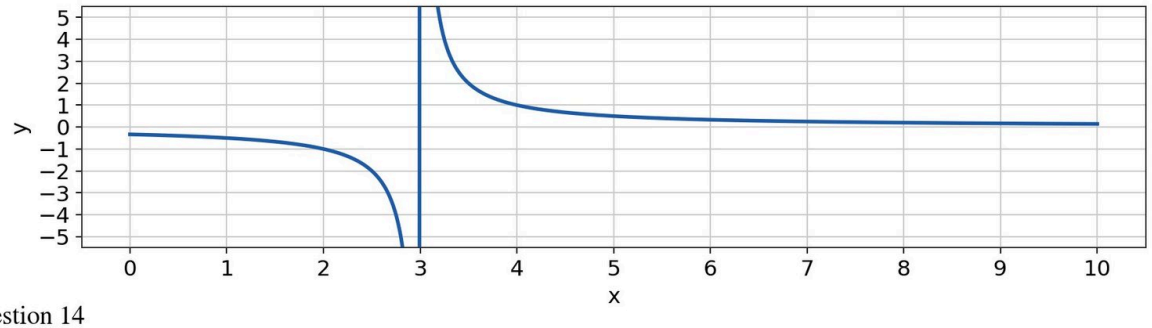
14 The graph shows a rational function. The vertical asymptote is at x =



Question 14

The graph shows a rational function. The vertical asymptote is at x =

ANSWER

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15 **The rational function 1 over (x minus 4) has a vertical asymptote at x equals**

ANSWER _____

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16 **The function f(x) = 3/(x + 2) is undefined at x =**

ANSWER _____

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17 A vertical asymptote of a rational function occurs where the

Question 17

A vertical asymptote of a rational function occurs where the

A) numerator is zero

B) denominator is zero

C) function equals 1

D) graph crosses the x axis

- **A** numerator is zero
- **B** denominator is zero
- **C** function equals 1
- **D** graph crosses the x axis

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18 The value of $\frac{1}{x}$ when x = 4 is

ANSWER _____

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19 **The reciprocal function $\frac{1}{x}$ evaluated at x = 2 is**

ANSWER _____

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20 **The reciprocal function $\frac{1}{x}$ evaluated at x = 3 is**

ANSWER _____

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21 **The reciprocal function $\frac{1}{x}$ evaluated at x = 4 is**

ANSWER _____

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22 **The reciprocal of 8 is**

ANSWER _____

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23 **If f(x) = 1/(x - 1) , then f(3) is**

ANSWER

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24 **Evaluating $x^2 + 2x + 1$ at x = -1 gives**

ANSWER

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25 **For f(x) = $\frac{2}{x}$, the value of f(3) is**

ANSWER

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ANSWER KEY

1.	A	**10.**	A	**19.**	0.5
2.	B	**11.**	A	**20.**	0.3333
3.	22	**12.**	5	**21.**	0.25
4.	10	**13.**	2	**22.**	0.125
5.	26	**14.**	3	**23.**	0.5
6.	-3	**15.**	4	**24.**	0
7.	2	**16.**	-2	**25.**	0.6667
8.	3	**17.**	B		
9.	4	**18.**	0.25		

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