ALBERTA MATH 30-1 · 10 QUESTIONS

Rational Functions — Practice Test

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1 **The graph below shows a rational function. As x approaches -1 from the right, the graph approaches**

- **A** +∞
- **B** -∞
- **C** 0
- **D** 3

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2 **The point of discontinuity on the graph of $f(x) = \frac{x^2 - 4x + 3}{x - 1}$ is at**

- **A** (1, 2)
- **B** (1, -2)
- **C** (3, 0)
- **D** (-1, -4)

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3 **The vertical asymptotes of the graph of $y = \frac{x - 2}{x^2 + x - 12}$ are x = a and x = b. The value of ab is**

ANSWER _____

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4 **The graph below shows a rational function. The x-intercept and the y-intercept are shown in row**

A x-intercept: -5 y-intercept: 5

B x-intercept: 5 y-intercept: -5

C x-intercept: 1 y-intercept: -5

D x-intercept: -5 y-intercept: -5

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5 When the equation $\frac{x + 1}{x - 3} = \frac{4}{x - 3}$ is solved algebraically, the result is

- **A** x = 3
- **B** x = -1
- **C** no solution
- **D** x = 4

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6 The equation of the oblique asymptote of the graph of $y = \frac{3x^2 + 2x - 4}{x + 3}$ is

- **A** y = 3x + 2
- **B** y = 3x + 7
- **C** y = x - 7
- **D** y = 3x - 7

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7 **The graph of $y = \frac{x^2 + kx - 6}{x + 2}$ has a point of discontinuity at $x = -2$. The value of k is**

ANSWER _____

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8 **Which of the following statements about the graph of $y = \frac{x - 2}{x^2 - 3x + 2}$ is true?**

A The vertical asymptote is $x = 2$

B The horizontal asymptote is $y = 1$

C There is a point of discontinuity at (2, 1)

D The x-intercept is 2

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9 **Compared with the graph of $y = \frac{1}{x}$, the graph of $y = \frac{1}{x + 3} - 2$ has a vertical asymptote and a horizontal asymptote shown in row**

A Vertical asymptote: x = 3 Horizontal asymptote: y = -2

B Vertical asymptote: x = -3 Horizontal asymptote: y = -2

C Vertical asymptote: x = -3 Horizontal asymptote: y = 2

D Vertical asymptote: x = -2 Horizontal asymptote: y = -3

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10 **The average cost, in dollars, for a company producing x units is modelled by $C(x) = \frac{20x + 900}{x}$. The number of units that must be produced for the average cost to be 25 dollars is**

ANSWER _____

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ANSWER KEY

1.	A	**5.**	C	**9.**	B
2.	B	**6.**	D	**10.**	180
3.	-12	**7.**	-1		
4.	D	**8.**	C		

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