

Algebra Test 1A

Name: _____

7 8 9 10 11 12



Navigator



Assessment



Student



25 min

Question: 1

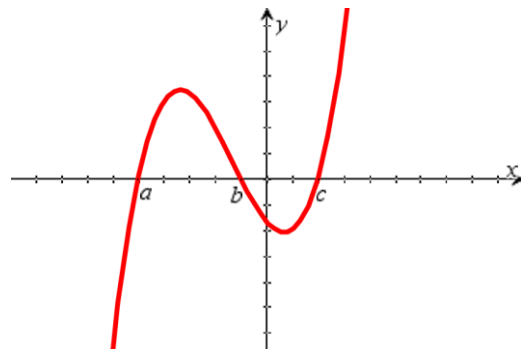
Which one of the following is **not** a factor of: $x^4 - 2x^3 - x^2 + 2x$?

- a) $x-1$ b) $x+1$ c) x d) $x-2$ e) $x+2$

Question: 2

The equation to the graph shown is given by:

- a) $f(x) = (x-a)(x-b)(x-c)$
b) $f(x) = (x+a)(x+b)(x+c)$
c) $f(x) = (x-a)(x-b)(x-c)$
d) $f(x) = (x-a)(x-b)(x-c)$
e) $f(x) = (x-a)(x-b)(x-c)$



Question: 3

If $x-a$ is a factor of: $x^3 + (4-a)x^2 - 4x + 1$ the value of a is:

- a) $\frac{1}{4}$ b) 4 c) $\frac{1}{2}$ d) $-\frac{1}{2}$ e) 2.78316

Question: 4

Given $g(x) = \ln\left(\frac{x}{2}\right) - 1$ and $g(f(x)) = x$ then $f(x)$ is equal to:

- a) x b) $2e$ c) $\ln(2x) + 1$ d) $2e^{x+1}$ e) $2e^x + 1$

Question: 5

If a and b are non-zero real numbers, and the graph of $y = ax^2 + b$ is defined on its maximal domain, then the graph is

- a) a one-to-one function b) a many-to-one function
c) a one-to-many function d) a many-to-one relation
e) not a relation

Question: 6

Given $f : (-2a, a] \rightarrow R$, $f(x) = -a - x$ where $a > 0$, the range of the function f is

- a) $(-2a, a]$ b) $[-2a, a)$ c) $(-2a, a)$ d) $[a, 2a)$ e) $(a, 2a]$

Question: 7

If $f(x) = (x^2 + ax + 36)(x^2 + 8x + b)$ has no solutions for $f(x) = 0$ then:

- a) $a = 6$ and $b = 64$
- b) $-6 < a < 6$ and $-64 < b < 64$
- c) $a < 12$ and $b < 16$
- d) $-12 < a < 12$ and $-16 < b < 16$
- e) $-12 < a < 12$ and $b > 16$

Question: 8

Given $f(x)$ is quadratic and a is a real constant, if $f(a) = 0$, $f(3a) = 0$ and $f(0) = 3a^2$, which of the following is true?

- a) The line $x = -2a$ is the axis of symmetry
- b) The point $(2a, a^2)$ is a minimum turning point
- c) The point $(2a, -a^2)$ is a minimum turning point
- d) The point $(2a, a^2)$ is a maximum turning point
- e) The point $(2a, -a^2)$ is a maximum turning point

Question: 9

For the function $f(x) = a + \frac{b}{(x+c)^2}$, on its maximal domain, which of the following is **false**?

- a) The graph has a vertical asymptote at $x = -c$.
- b) The graph has a horizontal asymptote at $y = a$.
- c) The maximal domain is $R \setminus \{-c\}$.
- d) The range is $R \setminus \{-b\}$.
- e) The graph is not continuous.

Question: 10

Given $f(x) = \sqrt{x+3}$ and $g(x) = \sqrt{1-x}$ defined on their maximal domain, then the graph of $h(x) = f(x) - g(x)$ has maximal domain and range respectively given by:

- a) $[-3, \infty)$, R
- b) $[1, \infty)$, R^+
- c) $[-\infty, 3) \cup [1, \infty)$, R
- d) $[-3, 1]$, R^+
- e) $[-3, 1]$, $[-2, 2]$