

GRE Quant Practice Test 1

Algebra

If the roots of the equation $x^2 - 16x - 612 = 0$ are a and b , what is the value of $a + b$?

- A -612
- B -16
- C 0
- D 16
- E 612

If $\sqrt{x+6} + \sqrt{x+1} = 5$, what is the value of x^2 ?

- A 1
- B 4
- C 9
- D 16
- E 25

If x and y are non-negative integers such that $2x + 3y = 8$ and $z = x^2 + y^2$, what is the maximum value of z ?

- A 0
- B 5
- C 13
- D 16
- E 25

If $\sqrt{x+4} - \sqrt{6-x} = 2$, what is the positive value of x ?

- A 2
- B 3
- C 5
- D 6
- E 7

If $f(x) = \frac{3f(x) + x}{2x - 1} + 1$, what is the correct expression of $f(x)$?

A $\frac{2x - 4}{3x - 1}$

B $\frac{3x + 1}{2x - 4}$

C $\frac{3x - 1}{2x - 4}$

D $\frac{3x - 1}{2x + 4}$

E $\frac{3x + 1}{2x + 4}$

If $x = 4 + \frac{1}{a}$ and $y = 4 - \frac{1}{a}$, what is the value of a^2 if $x^2 + y^2 = \frac{65}{2}$?

A $\frac{1}{4}$

B $\frac{1}{2}$

C 2

D 4

E 8