When \(a \ne 0\), there are two solutions to \(ax^2 + bx + c = 0\) and they are $$x = {-b \pm \sqrt{b^2-4ac} \over 2a}.$$

a x 2 + b x + c = 0 a x 2 + b x = - c x 2 + b a x = - c a Divide out leading coefficient. x 2 + b a x + b 2 a 2 = - c (4 a) a (4 a) + b 2 4 a 2 Complete the square. (x + b 2 a) (x + b 2 a) = b 2 - 4 a c 4 a 2 Discrimin revealed. (x + b 2 a) 2 = b 2 - 4 a c 4 a 2 x + b 2 a = b 2 - 4 a c 4 a 2 x = - b 2 a ± { C } b 2 - 4 a c 4 a 2 There's the vertex formula. x = - b ± { C } b 2 - 4 a c 2 a

0 1 0 0 0 1 1 0 0 4.56 4.56 4 5 4 5 4.56 4.56 π ℯ ℯ ⅈ ⅈ γ ∞ 17 29

∫ 0 1 dx (a + 1) x = π

∫ E (α f + β g) d μ = α ∫ E f d μ + β ∫ E g d μ

A = (9 8 6 1 2 7 4 9 2 6 0 5) or A = [9 8 6 1 2 7 4 9 2 6 0 5]

[a 11 − λ ⋯ a 1n ⋮ ⋱ ⋮ a n1 ⋯ a nn − λ] [x 1 ⋮ x n] = 0

x − 3 + 3 x + 3 x x − 3 + i y 2 (r + x)

∑ n = 0 t f (2 n) + ∑ n = 0 t f (2 n + 1) = ∑ n = 0 2 t + 1 f (n)

x 2 = | x | = { +x , if x > 0 0 , if x = 0 −x , if x < 0

H (j ω) = { x − j ω σ 0 for | ω | < ω σ 0 for | ω | ω σ x = - b ± b 2 - 4 a c 2 a   f ' (a) = lim h→0 f (a + h) − f (a) h

1 + ∑ k = 1 ∞ q k + k 2 (1 − q) (1 − q 2) … (1 − q k) = ∏ j = 0 ∞ 1 (1 − q 5 j + 2) (1 − q 5 j + 3) , for | q | < 1