

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

$$ax^2 + bx + c = 0$$

$$ax^2 + bx = -c$$

$$x^2 + \frac{b}{a}x = \frac{-c}{a} \quad \text{Divide out leading coefficient.}$$

$$x^2 + \frac{b}{a}x + \left(\frac{b}{2a}\right)^2 = \frac{-c(4a)}{a(4a)} + \frac{b^2}{4a^2} \quad \text{Complete the square.}$$

$$\left(x + \frac{b}{2a}\right)\left(x + \frac{b}{2a}\right) = \frac{b^2 - 4ac}{4a^2} \quad \text{Discriminant revealed.} \qquad \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}$$

$$\left(x + \frac{b}{2a}\right)^2 = \frac{b^2 - 4ac}{4a^2}$$

$$x + \frac{b}{2a} = \sqrt{\frac{b^2 - 4ac}{4a^2}}$$

$$x = \frac{-b}{2a} \pm \sqrt{\frac{b^2 - 4ac}{4a^2}} \quad \text{There's the vertex formula.}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$4.56 + 4.56 + \frac{4}{5} + 4 + 5i + 4.56e^{4.56i} + \pi + e + e + i + i + \gamma + \infty \qquad 17 + 29i \in \mathbb{C}$$

$$\int\limits_0^1 \frac{\mathrm{d}x}{(a+1)\sqrt{x}} = \pi \qquad \int_{\mathbb{E}} (\alpha f + \beta g) \, \mathrm{d}\mu = \alpha \int_{\mathbb{E}} f \, \mathrm{d}\mu + \beta \int_{\mathbb{E}} g \, \mathrm{d}\mu$$

$$A = \begin{pmatrix} 9 & 8 & 6 \\ 1 & 2 & 7 \\ 4 & 9 & 2 \\ 6 & 0 & 5 \end{pmatrix} \text{ or } A = \begin{bmatrix} 9 & 8 & 6 \\ 1 & 2 & 7 \\ 4 & 9 & 2 \\ 6 & 0 & 5 \end{bmatrix} \qquad \begin{bmatrix} a_{11} - \lambda & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{n1} & \cdots & a_{nn} - \lambda \end{bmatrix} \begin{bmatrix} x_1 \\ \vdots \\ x_n \end{bmatrix} = 0$$

$$\sqrt{x-3}+\sqrt{3x}+\sqrt{\frac{\sqrt{3}x}{x-3}}+i\frac{y}{\sqrt{2(r+x)}} \qquad \sum_{n=0}^t f(2n) + \sum_{n=0}^t f(2n+1) = \sum_{n=0}^{2t+1} f(n)$$

$$\sqrt{x^2}=|x|=\begin{cases} +x & , \text{ if } x > 0 \\ 0 & , \text{ if } x = 0 \\ -x & , \text{ if } x < 0 \end{cases} \qquad H(j\omega)=\begin{cases} x^{-j\omega\sigma_0} & \text{for } |\omega|<\omega_\sigma \\ 0 & \text{for } |\omega| \geq \omega_\sigma \end{cases}$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \qquad f'(a) = \lim_{h \rightarrow 0} \frac{f(a+h) - f(a)}{h}$$

$$1 + \sum_{k=1}^{\infty} \frac{q^{k+k^2}}{(1-q)(1-q^2)\dots(1-q^k)} = \prod_{j=0}^{\infty} \frac{1}{(1-q^{5j+2})(1-q^{5j+3})}, \text{ for } |q| < 1$$