

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

$$\begin{aligned} ax^2 + bx + c &= 0 \\ ax^2 + bx &= -c \\ x^2 + \frac{b}{a}x &= \frac{-c}{a} && \text{Divide out leading coefficient.} \\ x^2 + \frac{b}{a}x + \left(\frac{b}{2a}\right)^2 &= \frac{-c(4a)}{a(4a)} + \frac{b^2}{4a^2} && \text{Complete the square.} \\ \left(x + \frac{b}{2a}\right)\left(x + \frac{b}{2a}\right) &= \frac{b^2 - 4ac}{4a^2} && \text{Discriminant revealed.} \\ \left(x + \frac{b}{2a}\right)^2 &= \frac{b^2 - 4ac}{4a^2} && \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix} \\ x + \frac{b}{2a} &= \sqrt{\frac{b^2 - 4ac}{4a^2}} \\ x &= \frac{-b}{2a} \pm \sqrt{\frac{b^2 - 4ac}{4a^2}} && \text{There's the vertex formula.} \\ x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \end{aligned}$$

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

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

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

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

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

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

$$f'(a)=\lim_{h\rightarrow 0}\frac{f(a+h)-f(a)}{h}$$

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