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Equations and formulas in Excel

Quadratic formula:

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

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

$b^2 - 4ac$ is called the discriminant (if this value is positive, there are two real solutions; if 0 there is one real solution, and if negative there is no real solution) $= D$

Numerator:
Positive version of the numerator: $-b + \sqrt{D}$ = PS
Negative version of numerator: $-b - \sqrt{D}$ =NS

Denominator: $2a$ = B

x_1=PS/B, x_2=NS/B

$$a = 1, b = 1, c = -2$$
$$x^2 + x - 2 = 0$$
$$(x + 2)(x - 1) = 0$$
$$x = -2, 1$$

Statistical formulas:

Standard Error:

For numerical values with mean: $SE = \frac{\sigma}{\sqrt{n}} \approx \frac{s}{\sqrt{n}}$
σ (sigma) is the standard deviation, n is the sample size

For proportions (categorical data): $SE = \sqrt{\frac{p(1-p)}{n}}$
p is the proportion of the population in the category, and n is the sample size

Standard Score:

$$z = \frac{x - \mu}{\sigma} \approx \frac{x - \bar{x}}{s}$$

μ (mean), σ is the standard deviation, x is the observation and z is the number of standard deviation units from the mean.

x is the observation, $\bar{x}$ is the mean (of the sample), s is the standard deviation

Graphing