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Probability from tables – see Excel (review)

Random simulation

Law of Large Numbers: the more trials of a random event that are collected, the closer the probability will be to the true value.

RAND() -- it generates a random number that falls between 0 and 1 (a useful stand in for a probability)

Two possible events (coin flip: fair and unfair);

Used with other probability distribution functions (such as the normal distribution)

RANDBETWEEN(lowerbound, upperbound) – it generates random integers between lowerbound and the upperbound inclusive

RANDBETWEEN(1,6) simulate a random die roll {1,2,3,4,5,6} and each outcome is equally likely.

Evaluating formulas in Excel:

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

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

$b^2 - 4ac$ is called the discriminant = D

Numerator: positive solution $-b + \sqrt{D} = PS$

Negative solution $-b - \sqrt{D} = NS$

Denominator (bottom): $2a = B$

$$x = \frac{PS}{B}, \frac{NS}{B}$$