

| A | B | C | D | E | F | G | H | I | J | K | | | |
|--|----------------------------------|---------------------------------------|---|---|---|-----------|--------------|---------------------------------------|---|---|---------------------------------|-----------------------------|---|
| BINOMIAL DISTRIBUTION (Fixed probability per try) | | | | | | | | | | | 1 | | |
| | <input type="text" value="50"/> | N: # of tries (assumed independent) | | | | | | | | | | 2 | |
| | <input type="text" value="0.2"/> | P: Constant chance of success per try | | | | | | | | | <input type="text" value="10"/> | Expected Value = Mean = N*P | 3 |
| | | | | | | | | | | | | 4 | |
| | | | | | | | | | | | | 5 | |
| K | PDF | Chance of exactly k successes | | | | K | CDF | Chance of k or fewer successes | | | | 6 | |
| 5 | 0.030 | =BINOMDIST(A7,B\$3,B\$4,0) | | | | 3 | 0.006 | =BINOMDIST(G7,B\$3,B\$4,1) | | | | 7 | |
| 6 | 0.055 | | | | | 4 | 0.018 | | | | 8 | | |
| 7 | 0.087 | | | | | 5 | 0.048 | | | | 9 | | |
| 8 | 0.117 | | | | | 6 | 0.103 | | | | 10 | | |
| 9 | 0.136 | | | | | 7 | 0.190 | | | | 11 | | |
| 10 | 0.140 | K=10 is the average | | | | | | | | | | 12 | |
| 11 | 0.127 | | | | | 13 | 0.889 | | | | 13 | | |
| 12 | 0.103 | | | | | 14 | 0.939 | | | | 14 | | |
| 13 | 0.075 | | | | | 15 | 0.969 | | | | 15 | | |
| 14 | 0.050 | | | | | 16 | 0.986 | | | | 16 | | |
| 15 | 0.030 | | | | | 17 | 0.994 | | | | 17 | | |

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|--|---------------------------------|--|---|---|---------------------------------|---------------------------|------------|--|---------------------------------|----------------|----|----|
| HYPERGEOMETRIC DISTRIBUTION (Sampling over 10% of population without replacing) | | | | | | | | | | | 18 | |
| | <input type="text" value="50"/> | # in Population | | | <input type="text" value="10"/> | # Successes in Population | | | <input type="text" value="10"/> | Size of Sample | | 19 |
| | | | | | | | | | | | 20 | |
| | | | | | | | | | | | 21 | |
| K | PDF | Chance of k successes in sample | | | | K | CDF | Chance of k or fewer successes | | | | 22 |
| 0 | 0.083 | =HYPGEOMDIST(A23,I\$20,D\$20,A\$20) | | | | 0 | 0.083 | =HYPGEOM.DIST(G23,I\$20,D\$20,A\$20,1) | | | | 23 |
| 1 | 0.266 | | | | | 1 | 0.349 | | | | 24 | |
| 2 | 0.337 | | | | | 2 | 0.686 | | | | 25 | |
| 3 | 0.218 | | | | | 3 | 0.903 | | | | 26 | |
| 4 | 0.078 | | | | | 4 | 0.982 | | | | 27 | |
| 5 | 0.016 | | | | | 5 | 0.998 | | | | 28 | |
| 6 | 0.002 | | | | | 6 | 1.000 | | | | 29 | |
| 7 | 0.000 | | | | | 7 | 1.000 | | | | 30 | |
| 8 | 0.000 | | | | | 8 | 1.000 | | | | 31 | |
| 9 | 0.000 | | | | | 9 | 1.000 | | | | 32 | |
| 10 | 0.000 | | | | | 10 | 1.000 | | | | 33 | |

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|--|-----------------------------------|---|---|---|--------------|-----------|------------|--|---|---|---------------------------------|-----------------------|----|
| POISSON DISTRIBUTION (Fixed success rate per unit time) | | | | | | | | | | | 34 | | |
| | <input type="text" value="0.20"/> | R: Rate of successes PER unit time | | | | | | | | | | 35 | |
| | <input type="text" value="50"/> | T: Number of time periods | | | | | | | | | <input type="text" value="10"/> | Mean = Expected = R*T | 36 |
| | | | | | | | | | | | 37 | | |
| | | | | | | | | | | | 38 | | |
| K | PDF | Chance of k successes in T periods | | | | K | CDF | Chance of k or fewer successes | | | | 39 | |
| 5 | 0.038 | =POISSON(A40,B\$36*B\$37,0) | | | | 1 | 0.000 | =POISSON(G40,B\$36*B\$37,1) | | | | 40 | |
| 6 | 0.063 | | | | | 2 | 0.003 | | | | | | |
| 7 | 0.090 | | | | Manual entry | 3 | 0.010 | Select max K so CDF is less than 0.025 | | | | | |
| 8 | 0.113 | | | | | 4 | 0.029 | | | | | | |
| 9 | 0.125 | | | | | 5 | 0.067 | | | | | | |
| 10 | 0.125 | K=10 is the average | | | | | | | | | | | |
| 11 | 0.114 | | | | | 15 | 0.951 | | | | | | |
| 12 | 0.095 | | | | | 16 | 0.973 | | | | | | |
| 13 | 0.073 | | | | Manual entry | 17 | 0.986 | Select min K so CDF is more than 0.975 | | | | | |
| 14 | 0.052 | | | | | 18 | 0.993 | | | | | | |
| 15 | 0.035 | | | | | 19 | 0.997 | | | | | | |

Unprotect Password: Excel

Note: Statistical significance is indicated for two-sided tests.