Binomial Distributions

11.6

Warm-up

Write Pascal’s Triangle to the 7th degree.

1

1 1

1 2 1

The Binomial Theorem is the expansion of Pascal’s Triangle.




We Try:

Expand

1. $\left(x-y\right)^{5}$
2. $\left(3x+2\right)^{4}$

You Try:

Expand

$$1)\left(-x+3\right)^{4}$$

A ***Binomial Experiment*** consists of *n* independent trials whose outcomes are either success or failures; the probability of success *p* is the same for each trial, and the probability of *q* is the same for each trial. Because there are only two outcomes, *p+q=1*.









We Try:

Students are assigned randomly to 1 of 3 guidance counselors. What is the probability that Counselor Jen will get two of the next 3 students assigned?

$$P\left(r\right)=nCrp^{r}q^{n-r}$$

You Try:

Michael takes a multiple-choice quiz that has 5 questions, with 4 answer choices for each question. What is the probability that she will get at least 2 answers correct by guessing?