

Home

Realtor

Algebra ALEKS Topics

Algebra Notes

Algebra Reviews

MAT0028

MAC1105

MGF ALEKS Topics

MGF Reviews

MGF Notes

STA2023

Stats ALEKS Topics

Stats Notes

Stats Reviews

Stats / Binomial problems: basic

Problem Explanation

Binomial problems: Basic

QUESTION

The workers' union at a particular university is quite strong. About 96% of all workers employed by the university belong to the workers' union. Recently, the workers went on strike, and now a local TV station plans to interview 4 workers (chosen at random) at the university to get their opinions on the strike. What is the probability that exactly 2 of the workers interviewed are union members?

Round your response to at least three decimal places. (If necessary, consult a [list of formulas](#).)

Put in calculator

$p: .96$
 $n: 4$
 $x: 2$
since it says exactly choose the $P(X=x)$ answer

By hand

$n C_x p^x (1-p)^{n-x}$

$n C_x$ → Combination formula you can use calculator or plug in to formula. It gives you total possible combinations.

p^x → prob of success

$(1-p)^{n-x}$ → prob of failure

$n = \text{total number you are choosing from}$
 $x = \text{how many you are picking in given scenario}$

$4 C_2 \cdot .96^2 \cdot .04^2 (1-.96)^{(4-2)}$

use calculator

$6 \cdot .96^2 \cdot .04^2 =$

Problem Explanation

Binomial problems: Basic

QUESTION

The workers' union at a particular university is quite strong. About 96% of all workers employed by the university belong to the workers' union. Recently, the workers went on strike, and now a local TV station plans to interview 4 workers (chosen at random) at the university to get their opinions on the strike. What is the probability that exactly 3 of the workers interviewed are union members?

Round your response to at least three decimal places. (If necessary, consult a [list of formulas](#).)

$n C_r = \frac{n!}{r!(n-r)!}$

$4 C_3 = \frac{4!}{3!(4-3)!}$

$= \frac{4 \cdot 3 \cdot 2 \cdot 1}{3 \cdot 2 \cdot 1 \cdot 1}$

$= \frac{4}{1}$

$= 4$

$p(x) = n C_r p^x q^{n-x}$

$p(x) = 4 C_3 (.96)^3 (.04)^{4-3}$

$p(x) = 4 \cdot 0.884736 \cdot .04$

$p(x) = 0.14155776$

$p(x) = 0.142$

$n = 4$
 $x = 3$
 $p = .96$
 $q = 1 - p = 1 - .96 = .04$

	A	B	C
1	What you are finding	Answer	Formula
2	n	4	Type in from problem
3	x	3	Type in from problem (not needed to find mean or standard deviation)
4	p	0.96	Type in from problem (as decimal)
5	q	0.04	=1-B4
6			
7			
8	Mean	3.84	=B3*B4
9	Standard Deviation	0.3919183588	=sqrt(B3*B4*B5)
10			
11	p(x)	0.14155776	=BINOMDIST(B4,B3,B5,0)

this 0 is what makes it "exactly 3"

Tags Archive RSS feed Youtube QR Code email akennon@fscj.edu with any issues on this website

Made with Montaigne and bigmission