P(3 tauls in 4 tosses)
$$\frac{4}{16}$$

HHHHH HHTT

HHHT

HHHT

HTHH

HTHH

HTHH

THHH

THHH

THHH

THHH

THHH

THHT

Given x, n, and P, we can compute the binomial probability based on the following formula:

$$P(X) = {}_{n}C_{x} \cdot p^{x} \cdot q^{n-x}$$

binomial distribution

Job a Com 4 hms j prob we get 3 tails
$$P(x=3) = {}_{4}C_{3}(0.5)^{3}(0.5)^{1}$$

$$= 0.25$$
Answer by using
$$\frac{x=3}{n=4}$$

$$p=0.5$$

$$q=0.5$$

1

The probability that a person has blue eyes is 0.375. If 50 people are randomly selected, what is the probability that 20 of them have he probability that 20 of them have n = 50; p = 0.375; q = 0.625 blue eyes. $P(x=20) = 50 C_{20}(0.375)^{20}(0.625)^{30}$ = 0.107

It is known that 18% of the population have completed at n=16 least one University Llegree $P_{q=1-0.18}$ 16 people are randomly selected, what is the probability that (a) 5 % them completed a tegrel x=5 (b) 10 of them complete " = 4" (b) f(x-10)=(a) $(5.18)^{2}(0.82)^{11}$ 16 C10 (0.18) (0.82) • = 0.093 = 0.000087 8.692...×1155

pga63 + 1, 3, 5, 7, 9, 10 h=6 p=0.03, $\chi=3$ $(3(0.3)(0.7)^3$

The probability that a new driver passes their drivers test on the first time is 0.583. Five people are randomly chosen, n=5; $\rho=0.583$ $q=\frac{1-0.583}{10.417}$

a. what is the probability that 3 of them get their license the first time $\frac{1}{5} \left(\frac{3}{5} \left(0.583 \right) \left(0.417 \right)^{\frac{2}{5}} = 0.346$

(b) What are all the possibilities

$$P(X=0) = {}_{5}C_{0}(0.583)^{0}(0.417)^{5} = 0.0126$$

$$P(X=1) = {}_{5}C_{1}(0.583)^{1}(0.417)^{4} = 0.088$$

$$P(X=2) = {}_{5}C_{2}(0.583)^{2}(0.417)^{3} = 0.246$$

$$P(X=3) = {}_{5}C_{3}(0.583)^{3}(0.417)^{2} = 0.345$$

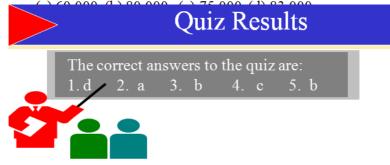
$$P(X=4) = {}_{5}C_{4}(0.583)^{4}(0.417)^{1} = 0.241$$

$$P(X=5) = {}_{5}C_{5}(0.583)^{5}(0.417)^{0} = 0.0674$$



1. What is the 11th digit after the decimal point for the irrational number *e*?

- (a) 2 (b) 7 (c) 4 (d) 5
- 2. What was the Dow Jones Average on February 27, 1993?
- (a) 3265 (b) 3174 (c) 3285 (d) 3327
- 3. How many students from Sri Lanka studied at U.S. universities from 1990-91?
- (a) 2320 (b) 2350 (c) 2360 (d) 2240
- 4. How many kidney transplants were performed in 1991?
- (a) 2946 (b) 8972 (c) 9943 (d) 7341
- 5. How many words are in the American Heritage Dictionary?

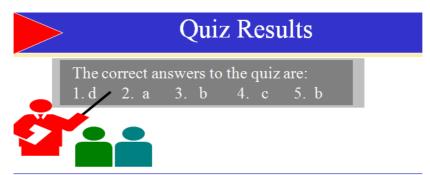


Count the number of correct answers. Let the number of correct answers = x.

Why is this a binomial experiment?

What are the values of n, p and q?

What are the possible values for x?



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Why is this a binomial experiment?

What are the values of n, p and q?

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Binomial Experiments

A multiple choice test has 8 questions each of which has 3 choices, one of which is correct. You want to know the probability that you guess exactly 5 questions correctly.

Find n, p, q, and x.

n = 8 p = 1/3

= 1/3 q = 2

x = 5



A doctor tells you that 80% of the time a certain type of surgery is successful. If this surgery is performed 7 times, find the probability exactly 6 surgeries will be successful. Find n, p, q, and x.

n = 7

p = 0.80

q = 0.20

x = 6









1 26 (0.8) 60.2) 7 0.0000 128 that. 2 26 (0.8) 60.2) 8 0.000 358 2 26 (0.8) 8 (0.2) 9 0.0043 3 26 (0.8) 8 (0.2) 9 0.0287 4 26 (0.8) 8 (0.2) 9 0.0287 5 26 (0.8) 60.2) 2 0.2753 6 26 (0.8) 60.2) 1 0.367 7 (2/0.8) 7/0.2) 0.2097 7 2(2/0.8) 7/0.2) 0.2097		χ	$n(x p^{x}q^{n-x})$	$P(\alpha)$	what is the prob. that:
2 2(2 (0.8)*(0.2)* 0.060358 2 2(2 (0.8)*(0.2)* 0.0043 3 2(2 (0.8)*(0.2)* 0.0287 4 2(4 (0.8)*(0.3)* 0.1/47 5 2(5 (0.8)*(0.3)* 0.2753 6 7(6 (0.8)*(0.3)! 0.367 6 7(6 (0.8)*(0.3)! 0.367			7(0/0/8)0(2)7	0.0000128	
3 -263 (0.8) 3 (0.2) 4 0.0287 4 -264 (0.8) 3 (0.2) 3 0.1147 5 -265 (0.8) 5 (0.2) 2 0.2753 6 -766 (0.8) 6 (0.2) 1 0.367 0.2753+0.367+0.2097		7	2 ^C 1(0.8)'(0.2)"		a) Haurgenis are
# 26/(0.8)/(0.a) 3 0.1/47 5 26/(0.8)/(0.a) 2 0.2753 6 76/(0.8)/(0.a) 1 0.367 0.2753+0.367+0.2097	_	2	1(2 (0.8) (0.2)		MICCESSUL 7.0.114/
6 76(0.8)6(0.2)1 0.36/ 0.2753+0.36/+0.001/	_	3		0-028/	, was a second
6 76(0.8)6(0.2)1 0.36/ 0.2753+0.36/+0.001/		4	$\frac{1}{2}C_{4}(0.8)^{4}(0.a)^{3}$	0-1147	h) at least 5 surgeries
6 76(0.8)6(0.2)1 0.36/ 0.2753+0.36/+0.001/		5	7 (3 (0.8) (0.2) 2	0, 2753	ar successful
$7 \left(\frac{1}{2}(\frac{1}{2}(0.8)^{2}/0.2)^{\circ}\right) = 0.2097 = 0.852$		6	7(6(0.8)6/0.2)	0.367	0.2753+0.367+0.269/
		7	7(7/0.8)7/0.2)0	0.2097	= 6,852

5P(x)=1

(c) no move than 2 are successful p(x=0)+p(x=1)+p(x=2)

(d) that less than a surgerus are successfl P(x=0)+P(x=1)=0.000393

The prebability that a grading students owns an IPhone is 27%.

By II students are ransonly questioned find the probability:

(a) that 6 non an IPhone?

(b) less than 3 own IPhone?

(c) $P(x=6) = {}_{11}C_{6}(0.27)^{6}(0.73)^{5} = 0.037_{3.79}$ (b) $P(x=2) = {}_{11}(2(0.27)^{3}(0.73)^{9} = 0.236_{3.79}$ (c) $P(x=1) = {}_{11}(2(0.27)^{3}(0.73)^{9} = 0.128_{3.79}$ P(x=1) = ${}_{11}C_{11}(0.27)^{3}(0.73)^{9} = 0.128_{3.79}$

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we are working on these monday!!!

The probablity that a randomly selected student lives in Renous is 0.31. given that 5 students are randomly selected, what is the probability that:

- a. 0 live in Renous $P(x=0) = {}_{5}C_{0}(0.31)^{0}(0.69)^{5} = 0.1564$
- b. 1 lives in Renous $P(x=1) = {}_{5}C_{1}(0.31)^{1}(0.69)^{4} = 0.3513$
- c. 2 lives in Renous $P(x=2) = {}_{5}C_{2}(0.31)^{2}(0.69)^{3} = 0.3157$
- d. 3 lives in Renous $P(x=3) = {}_{5}C_{3}(0.31)^{3}(0.69)^{2} = 0.1418$
- e. 4 lives in Renous $P(x=4) = {}_{5}C_{4}(0.31)^{4}(0.69)^{1} = 0.0319$
- f. 5 lives in Renous $P(x=5) = {}_{5}C_{5}(0.31)^{5}(0.69)^{0} = 0.0029$