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## Properties of Binomial Coefficient Video

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- Hi again, in the last two videos

we talked about the binomial coefficient,

which count the number of  $n$ -bits strings with  $k$  ones

or the number of  $k$  element subsets over a set of size  $n$

and these videos are a little long.

So in this new, in this video now,



### 4.5 Properties of Binomial Coefficient

#### POLL

For a positive integer  $n$ ,  $n$  choose  $(n-1)$  equals to

#### RESULTS

- |   |            |
|---|------------|
| <input type="radio"/> <b>n</b>              | <b>80%</b> |
| <input type="radio"/> <b>1</b>              | <b>10%</b> |
| <input checked="" type="radio"/> <b>n-1</b> | <b>7%</b>  |
| <input type="radio"/> <b>n+1</b>            | <b>3%</b>  |

Submit

Results gathered from 324 respondents.

## FEEDBACK

The answer is n.

1

0/1 point (graded)

A deck  $n \geq 5$  cards has as many 5-card hands as 2-card hands. What is  $n$ ?

21

✖ Answer: 7

21

## Explanation

From the information given, we have  $\binom{n}{5} = \binom{n}{2}$  which clearly holds for  $n = 7$  since  $\binom{n}{5} = \binom{n}{n-5}$ .

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You have used 4 of 4 attempts

**i** Answers are displayed within the problem

2

0/1 point (graded)

If  $\binom{n+2}{5} = 12\binom{n}{3}$ , find  $n$ .

12

✖ Answer: 14

12

Explanation

As  $\binom{n+2}{5} = \frac{(n+2)(n+1)}{5 \cdot 4} \binom{n}{3}$ ,  $\frac{(n+2)(n+1)}{5 \cdot 4} = 12$ . Hence  $n = 14$ .

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You have used 3 of 3 attempts

**i** Answers are displayed within the problem

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