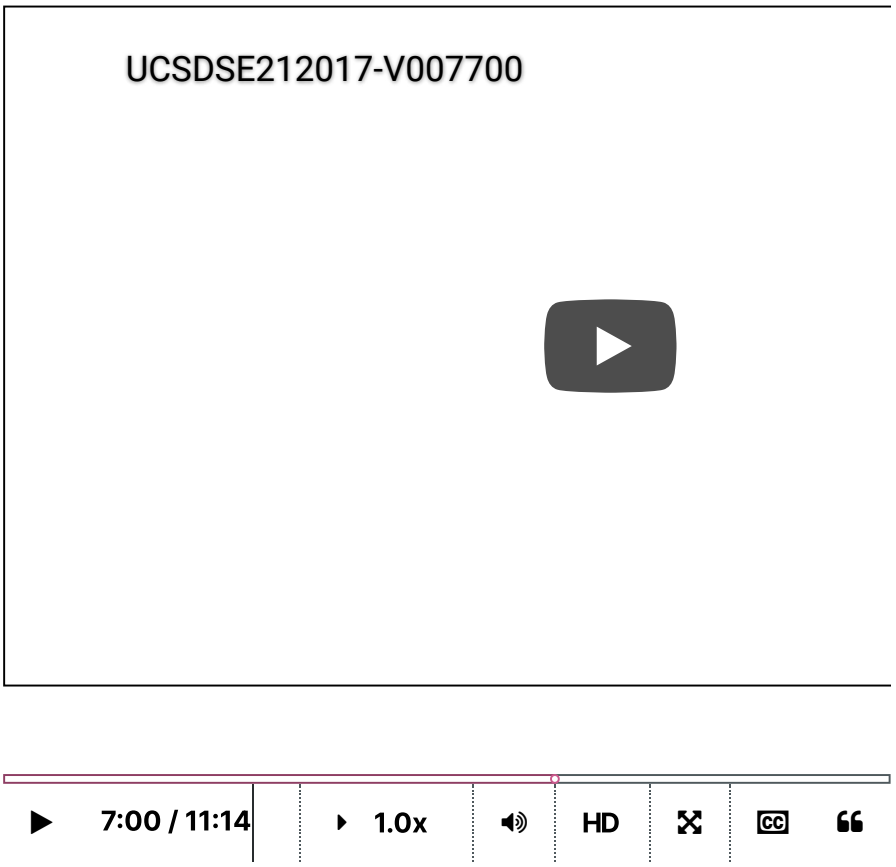
Problem Sets due May 4, 2022 18:05 +03

Video



And we're going to show it's 2 to the n,

and again you could, so here is an example.

3 choose 0, plus 3 choose 1, plus 3 choose 2,

plus 3 choose 3, is what?

3 choose 0 is 1, 3 choose 1 is 3,

3 choose 2 is 3, 3 choose 3 is 1,

so we have 1 plus 3 plus 3 plus 1,

which gives us 8, which is 2 cubed.

And this is (speaks softly) summation

of n choose I is 2 to the n,

and the question is why?

And again you could give an

4.5_Properties_of_Binomial_Coefficient

POLL

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

RESULTS

1	**8%**
n-1	**15%**
n	**69%**

n+1 8%

Submit

Results gathered from 13 respondents.

FEEDBACK
The answer is n.

1 (Graded)

1/1 point (graded)
A deck $n \geq 5$ cards has as many 5-card hands as 2-card hands. What is n?

7

✔ **Answer:** 7

7

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

Submit You have used 1 of 4 attempts

Answers are displayed within the problem

2 (Graded)

1/1 point (graded)
If $\binom{n+2}{5} = 12\binom{n}{3}$, find n.

14

✔ **Answer:** 14

14

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 $n = 14$.

Submit You have used 1 of 3 attempts

Answers are displayed within the problem

3

0 points possible (ungraded)

Which of the following is the expansion of $(x+y)^3$?

- $x^3 + y^3$
- $x^3 + x^2y + xy^2 + y^3$
- $x^3 + 6xy + y^3$
- $x^3 + 3x^2y + 3xy^2 + y^3$ ✔

Submit You have used 1 of 2 attempts

Answers are displayed within the problem

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