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Binomial Coefficients

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Video



formula which is
n factorial divided k factorial
and divide it again by n minus k
factorial
and what we want to do next is find
some properties of the
Binomial Coefficients.
So that's what we're going to do
next.
See you then.

▶ 5:31 / 5:57

▶ 1.0x

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End of transcript. Skip to the start.

4.4 Applications of Binomial Coefficients

POLL

You school offers 6 science classes and 5 art classes. How many schedules can you form with 2 science and 2 art classes if order doesn't matter.

RESULTS

<input checked="" type="radio"/> 25	12%
<input type="radio"/> 55	6%
<input type="radio"/> 60	0%
<input type="radio"/> 150	82%

Submit

Results gathered from 17 respondents.

FEEDBACK

The answer is (6 choose 2) * (5 choose 2) = 150.

1 (Graded)

2.0/2.0 points (graded)

How many ordered pairs (A, B) , where A, B are subsets of $\{1, 2, 3, 4, 5\}$, are there if:

- $|A| + |B| = 4$

210

✔ Answer: 210

210

Explanation

Explanation

Number of ways is $\binom{5}{0}\binom{5}{4} + \binom{5}{1}\binom{5}{3} + \cdots + \binom{5}{4}\binom{5}{0}$.

Submit

You have used 1 of 4 attempts

i Answers are displayed within the problem

2 (Graded)

0.0/2.0 points (graded)
In the video (slide 6, minute 4:04), we discussed the number of non-decreasing grid-paths from $(0, 0)$ to $(6, 4)$.
How many of these paths go through the point $(2, 2)$?

7

✖ Answer: 90

7

Explanation
From $(0, 0)$ to $(2, 2)$, there are $\binom{4}{2} = 6$ paths.
From $(2, 2)$ to $(6, 4)$, there are $\binom{6}{2} = 15$ paths.
The total number of paths is $6 \times 15 = 90$.

Submit

You have used 4 of 4 attempts

i Answers are displayed within the problem


Discussion

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 **STAFF: Please check grader on question 2**

The question, as phrased, seems to suggest an answer that is marked incorrect by the grader.

1 **▼**

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