

Precalculus - The Binomial Theorem - Test

Common Core A-APR.C.5 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

This 20-point test covers binomial coefficients, Pascal's triangle, expansions, coefficients and probability with coin tosses (A-APR.C.5). You have 45 minutes. Show your work.

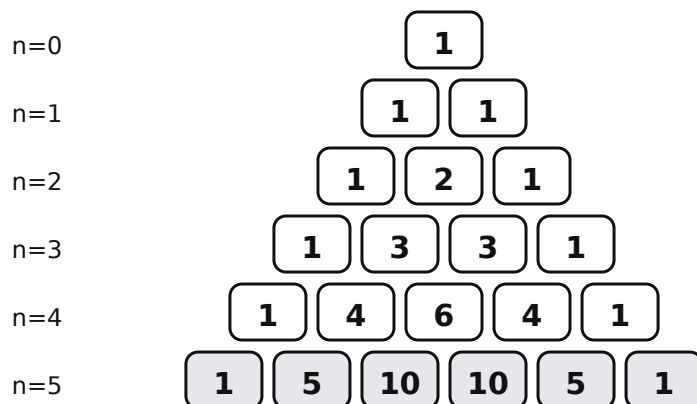
About this test

- Grade: Precalculus
- Chapter: The Binomial Theorem
- Standards: A-APR.C.5
- Time: 45 minutes
- Total: 20 points

Question 1 - Evaluate [2 pts]

Evaluate $C(9,4)$ and $\frac{7!}{4!3!}$.

Question 2 - Expand [2 pts]



Pascal's triangle, rows 0 to 5.

Expand $(x+1)^5$.

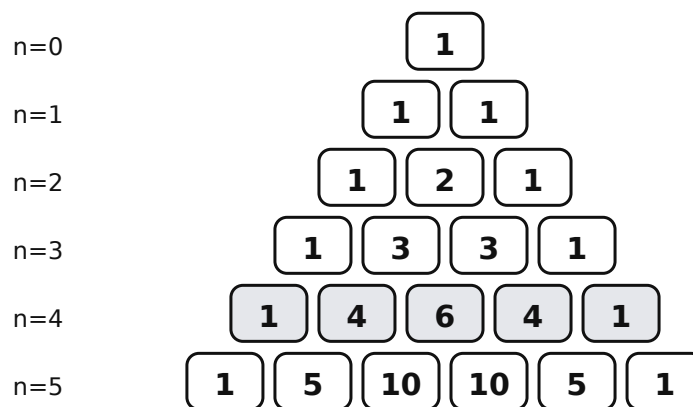
Question 3 - Expand with a coefficient [2 pts]

Expand $(2x-3)^3$.

Question 4 - A single term [2 pts]

Find the 3rd term of $(x+4)^6$.

Question 5 - Pascal's triangle [3 pts]



Pascal's triangle, rows 0 to 5.

(a) Use row 4 to list the coefficients of $(a+b)^4$. (b) Expand $(x+2)^4$. (c) Find the sum of the coefficients of $(x+2)^4$.

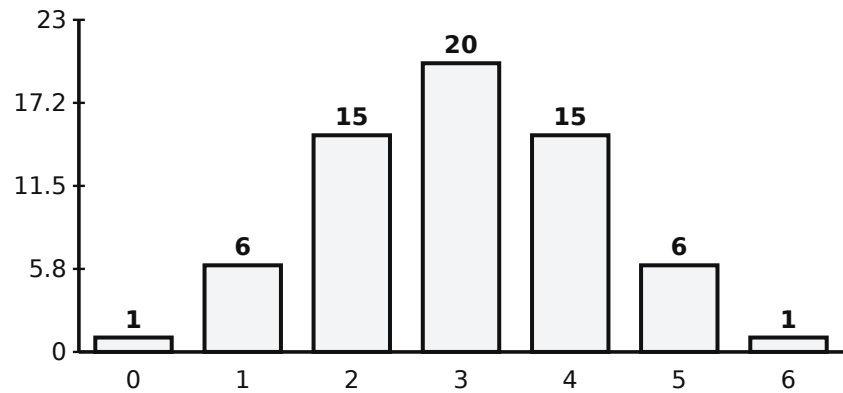
Question 6 - A coefficient [2 pts]

Find the coefficient of x^2 in $(3x-2)^5$.

Question 7 - Constant term [2 pts]

Find the constant term of $(x^2+\frac{1}{x})^9$.

Question 8 - Probability [3 pts]



Row 6: ways to get k heads in 6 tosses.

A fair coin is tossed 6 times. (a) How many outcomes have exactly 2 heads? (b) How many outcomes are there in total? (c) Find the probability of exactly 2 heads to three decimal places.

Question 9 - Approximation [2 pts]

Use the first three terms of $(1-0.02)^4$ to approximate 0.98^4 .