

Calculating a Combination

In mathematics, to calculate the combination of n things taken r at a time, we use the formula

$${}_nC_r = \frac{n!}{r!(n-r)!}$$

The TI-83/84 has this formula already built in.

To calculate ${}_{10}C_7 = \frac{10!}{7!(10-7)!}$, on the home screen first press **10**, then press the **MATH** key. Next press the **RIGHT ARROW** key three times so that **PRB** is highlighted. Press **3** to select the combination formula. Next type **7** and press **ENTER**. The results are shown below.

10	MATH NUM CPX PRB 1: Frac 2: Dec 3: 3 4: √ 5: *√ 6: fMin(7: fMax(PRB	MATH NUM CPX PRB 1: rand 2: nPr 3: nCr 4: ! 5: randInt(6: randNorm(7: randBin(PRB
10 nCr	10 nCr 7	10 nCr 7 120