

PRECALC - Classwork

Given: 20 question multiple choice test, 4 choices per question.

Find: Probability of 60% or more by guessing.

C = correct = 1/4 W = wrong = 3/4

$$n := 20 \quad r := 0..8 \quad C_{\text{ww}} := \left(\frac{1}{4}\right) \quad W_{\text{ww}} := \frac{3}{4}$$

$$P(n,r) := \left(\frac{n!}{r!(n-r)!}\right) \cdot C^{n-r} \cdot W^r$$

Number Correct:

r =	P(n,r) =
0	0.000000000001
1	0.000000000055
2	0.000000001555
3	0.000000027994
4	0.000000356927
5	0.000003426496
6	0.000025698719
7	0.000154192312
8	0.000751687521

20
19...

$$\sum_r P(n,r) = 0.000935391579$$

= .09% chance
of guessing and
getting ≥ 60% !!