S15 Exam 1 Problem 1 Combinatorics, Dave Bayer



Exam 22

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[1] Starting from the bottom hexagon, how many paths are there to the top hexagon, if one moves upward at each step to one of the three (or fewer) neighboring hexagons that is higher?



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Exam 22

[2] How many paths are there from the lower left square to the upper right square of the grid below, moving only up or to the right, without passing through any shaded square?

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Exam 22

[3] How many ways can one fill a tube of length 8, using sticks of length 1, 2, 4, or 8?

Four of the possibilities are shown below:



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Exam 22

[4] How many ways can one make change for 20 cents, using 1 cent, 2 cent, and 4 cent coins?

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Exam 22

[5] How many ways can one cut an 11-gon into three 5-gons?