Probability Type of Problems in AMC

Problem	Solution
AMC 8 – Beginner Level Two dice are thrown. What is the probability that the product of the two numbers is a multiple of 5?	To be a 5-multiple, it must be ☐×5 or 5×☐. There are 6 + 6 – 1 = 11 different pairs. probability = $\frac{11}{36}$ ⇐ ans
AMC 8 – Intermediate Level A box contains 3 red chips and 2 green chips. Chips are drawn randomly, one at a time without replacement, until all 3 of the reds are drawn or until both green chips are drawn. What is the probability that the 3 reds are drawn?	Case 3R: 4 cases:RRR, GRRR, RGRR, RRGR, Case 2G 6 cases:GG, RGG, GRG, RRGG, GRRG, RGRG $\frac{4}{10} = \frac{2}{5}$ ⇐ ans
AMC 8 – Advanced Level (AMC 10) Sergio randomly selects a number from the set {1, 2, …, 10}, and Tina randomly selects two distinct numbers from the set {1, 2, 3, 4, 5}. What is the probability that Sergio's number is <u>greater than</u> the sum of the two numbers chosen by Tina?	Tina's outcome. Sergio's win 4: $\frac{1}{10} \times \frac{1}{10}$ 5: $\frac{1}{10} \times \frac{2}{10}$ 6: $\frac{1}{10} \times \frac{4}{10}$ 7: $\frac{1}{10} \times \frac{6}{10}$ 8: $\frac{1}{10} \times \frac{8}{10}$ 9: $\frac{1}{10} \times \frac{9}{10}$ 10: $\frac{1}{10} \times \frac{10}{10}$ Total = $\frac{40}{100} = \frac{2}{5}$ ⇐ ans

	1	2	3	4	5
1		3	4	5	6
2			5	6	7
3				7	8
4					9
5					