



Math Olympiad and Problem Solving Programs

F130 - Advanced Problem Solving

Problem Set 5.1 - Chances

Name:

Date:

1. $\frac{1}{2}$

2. $\frac{1}{3}$

3. $\frac{4}{15}$

4. $\frac{8}{25}$

5. $\frac{4}{11}$ or $\frac{5}{11}$

6. $\frac{1}{5}$

7. $\frac{1}{4}$

8. $\frac{1}{4}$

9. $\frac{3}{16}$

We will find the probability here by counting our successful events. The only 3 ways we can have our sum be less than 4 (or equal 2 or 3), are 1 + 1, 1 + 2, and 2 + 1. There are 16 possible sums (4 spins \times 4 spins). Therefore our probability of having a sum less than 4 is $\frac{3}{16}$.

10. $\frac{1}{2}$

To find the probability of drawing two odd cards we find the probability of drawing the first odd card and multiply it by the probability of drawing the second odd card. There are 3 odd cards so our probability of drawing our first odd card is $\frac{3}{4}$. For the second drawing, there are only 2 odd cards left out of 3 cards left. This means our probability of drawing our second odd card is $\frac{2}{3}$. When we multiply them together we get $\frac{3}{4} \times \frac{2}{3} = \frac{1}{2}$.