



Math Olympiad and Problem Solving Programs
E120 - Honors Algebra Problem Solving
Problem Set 6.2 - SAT Probability

Name:

Date:

1. We can list out the ways we get a sum of at least 7:

$$1 + 6$$

$$2 + 5, 2 + 6$$

$$3 + 4, 3 + 5, 3 + 6$$

... and so on. Notice when we count them we have a pattern: $1 + 2 + 3 + 4 + 5 + 6 = \frac{6 \times 7}{2} = 21$

Our probability is $\frac{21}{36} = \frac{7}{12}$, which is E.

2. B

3. D

4. E

5. B

6. A

7. D

8. C

9. We have two ways of drawing one red and one blue:

A red marble from A and a blue marble from B . -OR- A blue marble from A and a red marble from B .

$$\binom{2}{5} \binom{1}{5} + \binom{3}{5} \binom{4}{5} = \binom{2}{25} + \binom{12}{25} = \binom{14}{25}, \text{ which is } \input type="checkbox"/> D.$$

10. 3, 4, 5, 6, 7, 8, 9, 10, 11 are the only possible sums, so there are 9 possible sums. E