

I. Find each probability if a coin is tossed 4 times.

- 1.) P (exactly 4 heads) 2.) P (0 heads) 3.) P (exactly 3 heads)
- 4.) P (exactly 2 heads) 5.) P (exactly 1 head) 6.) P (at least 3 heads)

II. Find each probability if a die is rolled 3 times.

- 7.) P (exactly one 2) 8.) P (exactly two 2's)
- 9.) P (exactly three 2's) 10.) P (at most one 2)

III. A town that presents a fireworks display during its July 4 celebration found the probability that a family with two or more children will watch the fireworks is 60%. If 5 of these families are selected at random, find each probability.

- 11.) P (exactly 3 families watch the fireworks) 12.) P (exactly 2 families watch the fireworks)
- 13.) P (exactly 5 families watch the fireworks) 14.) P (no families watch the fireworks)
- 15.) P (at least 4 families watch the fireworks) 16.) P (at most 2 families watches the fireworks)

IV. One section of a standardized English language test has 10 true/false questions. Find each probability when a student guesses at all ten questions.

- 17.) P (exactly 40% correct) 18.) P (exactly half correct)

V. In 2001, the American Heart Association reported that 50 percent of the Americans who receive heart transplants are ages 50 – 64 and 20 percent are ages 35 – 49.

- 19.) In a randomly selected group of 10 heart transplants recipients,
what is the probability that at least 8 of them are ages 50 – 64?
- 20.) In a randomly selected group of 5 heart transplants recipients,
what is the probability that 2 of them are ages 34 – 49?

VI. Use binomial experiments to complete each problem.

- 21.) Expand: $(x - 2)^3$ 22.) Expand: $(2a + b)^6$ 23.) Expand: $(3x - 2y)^4$
- 24.) Find the fourth term: $(2x + 5y)^5$ 25.) Find the middle term: $(4x^2 + 3y)^8$