

Review for Section 7.4: Use of Counting Techniques in Probability.

$$1. \frac{6 * 1 * 4 * 1 * 2 * 1}{6 * 5 * 4 * 3 * 2 * 1} = \frac{1}{15} = 0.0667$$

$$2. (a) \frac{C(10, 6)}{C(26, 6)} = 0.00091231$$

(b) remember that a majority mean more than half.

$$\frac{C(9, 4) * C(17, 2) + C(9, 5) * C(17, 1) + C(9, 6) * C(17, 0)}{C(26, 6)} = 0.0840985$$

$$(c) \frac{C(4, 4) * C(22, 2)}{C(26, 6)} = \frac{3}{2990} = 0.0010033445$$

$$(d) \frac{C(4, 2) * C(22, 4)}{C(26, 6)} = \frac{57}{299} = 0.1906354515$$

$$3. \frac{C(7, 2) * C(8, 8) + C(7, 3) * C(8, 7) + C(7, 4) * C(8, 6)}{C(15, 10)} = \frac{69}{143} = 0.426573$$

$$4. \frac{1}{\frac{11!}{4!4!2!}} = 0.00002886$$

$$5. \frac{C(4, 2)}{C(52, 2)} = \frac{1}{221} = 0.0045$$

$$6. \frac{3(1 * 1 * 14)}{15^3} + \frac{1}{15^3}$$