

Math 1160 – Section 5.6 Homework Answer Key

4a. $C(12, 4) = 495$

4b. $C(8, 4) = 70$

4c. $C(8, 2) \times C(4, 2) = 168$ Multiply because both must be true (2 red balls AND 2 white balls)

4d. $C(8, 3) \times C(4, 1) + C(8, 4) \times C(4, 0) = 294$

(3 red balls AND 1 white ball) OR (4 red balls AND 0 white balls)

4e. $C(8, 4) \times C(4, 0) + C(8, 3) \times C(4, 1) + C(8, 2) \times C(4, 2) + C(8, 1) \times C(4, 3) + C(8, 0) \times C(4, 4) = 327$

(4 red AND 0 white) OR (3 red AND 1 white) OR (2 red AND 2 white) OR (1 red AND 3 white) OR (0 red AND 4 white)

6a. $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 256$ (or 2^8)

6b. $C(8, 3) = 56$

6c. $C(8, 2) + C(8, 3) + C(8, 4) + C(8, 5) + C(8, 6) + C(8, 7) + C(8, 8) = 247$

OR

$2^8 - C(8, 0) - C(8, 1)$ **This is total outcomes minus those not meeting criteria

6d. $C(8, 4) + C(8, 5) = 126$

12. Calculate the number of combinations of getting 3 answers correct OR 4 answers correct OR 5 answers correct.

$$C(5,3) + C(5,4) + C(5,5) = 10 + 5 + 1 = 16 \text{ ways}$$

16. Calculate the number of combinations of choosing 2 males out of the 4 males available AND choosing 2 females out of the 5 females available.

$$C(4, 2) \times C(5, 2) = 6 \times 10 = 60 \text{ ways}$$

20. $C(10, 7) = 120$ ways