

MATH 112 Discrete Mathematics.
Answers to Exercise Set II

Problem 1. $\frac{8!}{3!5!}$

Problem 2.

a. $C(100, 2) - 100$

b. $C(100, 4)$

Problem 3.

a. $\frac{119!}{2!7!2!8!100!}(-3)^7(-2)^2(5)^8(3)^{100}$

b. $C(6 + 119 - 1, 119)$

Problem 4.

a. $C(4 + 8 - 1, 8)$

b. $C(3 + 15 - 1, 15) + C(3 + 13 - 1, 13) + C(3 + 11 - 1, 11)$

Problem 5.

a. $C(3 + 12 - 1, 12)$

b. $C(3 + 30 - 1, 30)$

c. $\binom{32}{2} - 15$

Problem 6. $C(n - 1, n - r)$

Problem 7. $C(10, 5)C(5, 3)C(2, 2)$

Problem 8.

a. 4^{15}

b. $4^6 C(4 + 9 - 1, 9)$

c. $C(4 + 5 - 1, 5)C(4 + 6 - 1, 6)$