

San Jose State University
Department of Mathematics, College of Science
Fall 2009
MATH 42, Discrete Mathematics
Answers of section 5.3

5.3 # 4

- a) (1, 2, 3), (1, 3, 2), (2, 1, 3), (2, 3, 1), (3, 1, 2), (3, 2, 1)
(1, 2, 4), (1, 4, 2), (2, 1, 4), (2, 4, 1), (4, 1, 2), (4, 2, 1)
(1, 2, 5), (1, 5, 2), (2, 1, 5), (2, 5, 1), (5, 1, 2), (5, 2, 1)
(1, 3, 4), (1, 4, 3), (3, 1, 4), (3, 4, 1), (4, 1, 3), (4, 3, 1)
(1, 3, 5), (1, 5, 3), (3, 1, 5), (3, 5, 1), (5, 1, 3), (5, 3, 1)
(1, 4, 5), (1, 5, 4), (4, 1, 5), (4, 5, 1), (5, 1, 4), (5, 4, 1)
(2, 3, 4), (2, 4, 3), (3, 2, 4), (3, 4, 2), (4, 2, 3), (4, 3, 2)
(2, 3, 5), (2, 5, 3), (3, 2, 5), (3, 5, 2), (5, 2, 3), (5, 3, 2)
(2, 4, 5), (2, 5, 4), (4, 2, 5), (4, 5, 2), (5, 2, 4), (5, 4, 2)
(3, 4, 5), (3, 5, 4), (4, 3, 5), (4, 5, 3), (5, 3, 4), (5, 4, 3)
- b) {1, 2, 3}, {1, 2, 4}, {1, 2, 5}, {1, 3, 4}, {1, 3, 5}, {1, 4, 5}, {2, 3, 4}, {2, 3, 5}, {2, 4, 5}, {3, 4, 5}

5.3 # 11

- a) 210
b) $210+120+45+10+1=386$
c) $1024-(120+45+10+1)=848$
d) 252

5.3 # 18

- a) $2^8 = 256$
b) $C(8, 3) = 56$
c) $2^8 - C(8, 2) - C(8, 1) - C(8, 1) = 219$
d) $C(8, 4) = 70$

5.3 # 22

- a) 5040
b) 720
c) 120
d) 120
e) 24
f) 0

5.3 # 25

- a) 94109400
b) 941094

- c) 3764376
- d) 90345024
- e) 114072
- f) 2328
- g) 24
- h) 79727040
- i) 3764376
- j) 109440