

Section 5.1 (P.344) : 3, 5, 9, 11, 25, 29

- ① 6 toppings are available to put on a pizza. How many different pizzas are possible if we must use an odd # of toppings? Note Order of toppings doesn't matter, toppings may not be used more than once.

Section 5.3 (P.360) : 3, 4, 5abd, 6abc, 15, 17, 20, 25 a-e, 33

Section 5.4 (P.369) : 3, 6, 12, 21

- ② A classroom has 2 rows of 9 seats each. of 15 students, 6 have been assigned to sit in the front row & 5 in the back row. (Note: You don't have the freedom to choose these 11 students; they are pre-selected.) The other 4 can sit anywhere. In how many ways can the 15 students be seated?

Section 5.5 (P.379) : 1, 3, 9 abd, 11, 13, 19

Section 6.1 (P.398) : 1, 3, 5, 9, 13, 19, 21, 37, 38

- ③ A bag contains 10 marbles : 5 red, 3 blue, 2 green if 4 marbles are picked from the bag, find the probability that : a) At least one is green b) there are 2 marbles of each of 2 different colors.

- ④ Suppose a pair of standard dice is rolled. Define the events : E_1 : an odd number is rolled
 E_2 : a number ≥ 7 is rolled

a) Compute $P(E_1)$, $P(E_2)$

b) Are E_1 and E_2 independent? Explain.

Section 4.3 (P.308) : 1, 7ac, 9, 18

- ⑤ Prove that, if $\{f_n\}$ is the fibonacci sequence, then
 $f_1^2 + f_2^2 + f_3^2 + \dots + f_n^2 = f_n f_{n+1}$

Section 7.1 (P.456) : 1ac, 5 a-d, 24

Section 7.2 (P.471) : 1 a-c, 3ac, 11, 13

- ⑥ Consider the 2nd degree recurrence :

$$a_n = 10a_{n-1} - 16a_{n-2}$$

a) Find the general solution

b) Find a_n if $a_0 = \dots$