Assignment 2

Please submit your assignments to the ENCS's Electronic Assignment Submission (EAS) system: https://fis.encs.concordia.ca/eas

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Show all the steps of your solution for full mark.

Solve the following problems from the textbook.

Exercises 8.1 (p. 396)

 #6,10,20

Exercises 8.2 (p. 401)
#2,6

Exercises 9.1 (p. 417)
#2

Exercises 9.2 (p. 431)
#20,30

Exercises 9.3 (p. 435)
#4,6

Exercises 9.4 (p. 439)
#2,6

Exercises 10.4 (p. 487)
#1,3

15. Prove that if n and k are integers with $1 \leq k \leq n$ then
$$k \cdot \binom{n}{k} = n \cdot \binom{n-1}{k-1}$$
   a) By using a combinatorial proof.
   b) By using an algebraic proof.

16. Give a combinatorial proof that

$$\sum_{k=1}^{n} k \cdot \binom{n}{k} = n \cdot 2^{n-1}$$