

361-Homework 1, Due September 5

You should solve 2 problems out of number 2-5 and 2 problems out 6-8.

1. Read the proof on the binomial theorem using induction on page 8
2. Ross, page 16 no 7
3. Ross, page 16 no 8 b), c)
4. Ross, page 16 no 14
5. Ross, page 16 no 21
6. Ross, page 19 no 5
7. Ross, page 20 no 13
8. Ross, page 53 no 2

361-Homework 1, Due September 12

All the problems (except for the last for which you have to consult your calculus book) are in chapter 2. Number 26 is for extra credit. Solve 3 of the 5 first problems and discuss the rest with your partner.

1. 5

2. 8

3. 10

4. 14

5. 15

6. 26

7. Let $0 < q < 1$. Show that $\sum_{n \geq 0} q^n = \frac{1}{1-q}$.

361-Homework 3, Due September 17

4 of the first 6 and the 2 last one

1. No 17 p=105
2. No 19 p=106
3. No 20 p=106
4. No 33 p=107
5. No 50 p=109
6. No 62 p=111
7. No 1 p=115
8. No 5 p=116

361-Homework 4, Due September 26

1. p171 no 10
2. p172 no 13
3. p 173 no 20
4. p=116 no 6
5. p=116 no 12
6. p 180 no 3

361-Homework 5, Due October 3

Three out of 1-4 and the last 2.

1. p171 no 3
2. p171 no 5
3. p173 no 21
4. p171 no 23
5. p171 no 8
6. p171 no 10

361-Homework 6, Due October 24

1. page 229 no 10
2. page 229 no 11
3. page 232 no 2
4. page 232 no 3
5. page 232 no 5

361-Homework 7, due November 1

1. p=236 no 5
2. p=236 no 7
3. p=237 no 11
4. p-232 no 1

361-Homework 7, due November 7

1. Let X be a discrete random variable and Y be a continuous random variable such that X and Y are independent. Show (formally) that

$$P(X + Y \leq a \text{ and } X = b) = P(Y \leq a - b)P(X = b).$$

2. p228 no 6
3. p234 no 26
4. p290 no 9
5. p290 no 10

361-Homework 9, due December 12

1. p427 no 4
2. p427 no 9
3. p427 no 11
4. Let $\Omega = \mathbb{N}_0 \times \mathbb{N}_0$ and

$$P(\{k, j\}) = \frac{e^{-2}}{k!j!}.$$

Let $X(k, j) = k$ and $Y(k, j) = k + j$. Calculate the conditional expectation $E[Y|X]$.