

EXAM 7 (duration: 25 minutes)

DatZ1143: Discrete mathematics for computing

Instructor: Abuzer Yakaryılmaz

Name and surname:

Student number:

Date:

Questions

(There are 5 questions, 10 points in total.)

1. What are the values of $\gcd(30, 90)$ and $\text{lcm}(30, 90)$? [1 points]
2. What is the greatest common divisor of the numbers in $\{14, 15, 16, 17\}$? [1 point]
3. What is the least common multiple of the numbers in $\{2, 3, 4, 8, 9\}$? [1 point]
4. Split the numbers in $\{6, 10, 21, 35\}$ into two sets such that the numbers in the same sets are relatively prime. [2 points]

5. Prove that for every positive integer n ,

$$1 \cdot 2 + 2 \cdot 3 + 3 \cdot 4 + 4 \cdot 5 + \cdots + n(n+1) = \frac{n(n+1)(n+2)}{3}.$$

[5 point]