

# Unit 15 - Week 10: Number Theory

## Course outline

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**Week 10: Number Theory**

- Solution of Congruences
- Chinese Remainder Theorem
- Totient; Congruences; Floor and Ceiling Functions

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## Assignment 10

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2019-10-09, 23:59 IST.**

1) What is the solution of  $307x \equiv 83 \pmod{360}$ ?

1 point

- 219
- 309
- 210
- 209

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
209

2) Which of the following is congruent to  $96!$  modulo 97?

1 point

- 193
- 194
- 195
- 196

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
193

3) How many solutions modulo 70 does " $21x \equiv 49 \pmod{70}$ " have?

1 point

- 0
- 7
- 4
- 6

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
7

4) How many solutions does " $x^2 - x + 4 \equiv 0 \pmod{7}$ " have?

1 point

- 0
- 7
- 4
- 6

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
0

5) Consider the following congruences:  $x \equiv 2 \pmod{3}$ ,  $x \equiv 2 \pmod{7}$ ,  $x \equiv 3 \pmod{5}$ . Their unique simultaneous solution modulo 105 is

1 point

- 233
- 23
- 128
- 82

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
23

6)  $\phi(140)$  is

1 point

- 140
- 70
- 48
- 40

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
48

7)  $\phi(2) + \phi(4) + \phi(10) + \phi(20) + \phi(38) + \phi(76) + \phi(190) + \phi(380)$  is

1 point

- 180
- 380
- 285
- 95

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
285

8)  $\lfloor \lfloor \lfloor 139.6 \rfloor / 4 \rfloor / 7$  is

1 point

- 5
- 4
- 6
- 3

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
4