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Unit 4 - Week 3

Week3_Assignment1

The due date for submitting this assignment has passed. Due on 2017-08-16, 23:59 IST.
As per our records you have not submitted this assignment.

1) Let $c \in Z_{3750}$ such that $49^{1000} \equiv c \pmod{3750}$. Then c = ***1 point***

- 0
- 1
- 49
- 2

No, the answer is incorrect.
Score: 0

Accepted Answers:
1

2) Let $\phi(n)$ be the number of positive integers coprime to n and less than n. Then $\phi(437)$ is equal to ***1 point***

- 436
- 396
- 385
- 435

No, the answer is incorrect.
Score: 0

Accepted Answers:
396

3) Let $n = pq$, where $p = 67$ and $q = 127$. Suppose that there exist $a \in Z_{\phi(n)}$ such that $ab \equiv 1 \mod \phi(n)$, where $b = 41$. Then the value of a is ***1 point***

- 1219
- 1200
- 1218
- 1217

No, the answer is incorrect.
Score: 0

Accepted Answers:
1217

4) Consider an RSA cryptosystem with $n = pq$, where $p = 13$ and $q = 29$. Let the public key be $(n,25)$. Then the encrypted value of 10 is ***1 point***

- 114
- 192

- 208
- 121

No, the answer is incorrect.
Score: 0

Accepted Answers:
114

5) Consider an RSA cryptosystem with $n = pq$, where $p = 13$ and $q = 29$. Let the public key be $(n, 25)$. Then the decrypted value of 10 is **1 point**

- 192
- 304
- 194
- 403

No, the answer is incorrect.
Score: 0

Accepted Answers:
192

6) Let the Legendre symbol value of $(4 / 19)$ and $(5 / 19)$ be r and s respectively. Then **1 point**

- $r = 1, s = 1$
- $r = -1, s = -1$
- $r = -1, s = 1$
- $r = 1, s = -1$

No, the answer is incorrect.
Score: 0

Accepted Answers:
r = 1, s = 1

7) Suppose p is an odd prime and a is an integer such that $a^{((p-1)/2)} \equiv -1 \pmod{p}$. Then **1 point**

- a is a quadratic residue modulo p.
- No such a exists.
- a is a quadratic non-residue modulo p.
- a is coprime to p.

No, the answer is incorrect.
Score: 0

Accepted Answers:
a is a quadratic non-residue modulo p.

8) The Jacobi symbol value of (145 /135) is **1 point**

- 2
- 0
- -1
- 1

No, the answer is incorrect.
Score: 0

Accepted Answers:
0

9) The Jacobi symbol value of (149 / 255) is **1 point**

- 0
- 1
- 2
- -1

No, the answer is incorrect.
Score: 0

Accepted Answers:
-1

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