Unit 9 - Week 7

Assignment 7

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

Due on 2020-11-04, 23:59 IST.

Please note that multiple options may be correct.

1) What is the number of distinct solutions of $2x^2 + 5x - 24 = 0$ in $\mathbb{Z}_{31}$? *0 points*

- [ ] 0,
- [ ] 1,
- [ ] 2,
- [ ] None of the above.

No, the answer is incorrect.
Score: 0
Accepted Answers:
1,

2) What is the number of distinct solutions of $2x^2 + 10x - 50 = 0$ in $\mathbb{Z}_{59}$? *0 points*

- [ ] 0,
- [ ] 1,
- [ ] 2,
- [ ] None of the above.

No, the answer is incorrect.
Score: 0
Accepted Answers:
2,

3) Which of the following n have the property that U_n has 8 square roots of 1? *0 points*

- [ ] 140,
- [ ] 308,
- [ ] 396,
- [ ] 572.
- [ ] 825.
- [ ] 1989.

No, the answer is incorrect.
Score: 0
Accepted Answers:
140,
308,
396,
572.
825.
1989.

4) Which of the following n have the property that U_n has 16 square roots of 1? *1 point*

- [ ] 308,
- [ ] 396,
- [ ] 504,
- [ ] 616,
- [ ] 1001,
- [ ] 1155.

No, the answer is incorrect.
Score: 0
Accepted Answers:
504,
616,
1155.

5) Which of the following n have the property that $\left(\frac{n}{37}\right) = 1$? *1 point*

- [ ] 10,
- [ ] 11,
- [ ] 12,
- [ ] 13,
- [ ] 14,
- [ ] 15.

No, the answer is incorrect.
Score: 0
Accepted Answers:
10,
11,
12,

6) Which of the following n have the property that $\left(\frac{n}{41}\right) = 1$? *1 point*

- [ ] 17,
- [ ] 18,
- [ ] 19,
- [ ] 20,
- [ ] 21,
- [ ] 22.

No, the answer is incorrect.
Score: 0
Accepted Answers:
18,
20,
21,

7) Which of the following primes p have the property that $\left(\frac{35}{p}\right) = 1$? *1 point*

- [ ] 31,
- [ ] 37,
- [ ] 41,
- [ ] 43,
- [ ] 47,
- [ ] 53.

No, the answer is incorrect.
Score: 0
Accepted Answers:
31,
43,

8) Which of the following primes p have the property that $\left(\frac{210}{p}\right) = 1$? *1 point*

- [ ] 59,
- [ ] 61,
- [ ] 67,
- [ ] 71,
- [ ] 73,
- [ ] 79.

No, the answer is incorrect.
Score: 0
Accepted Answers:
61,
67,
73,
79.

9) Which of the following congruence classes of primes p have the property that $\left(\frac{10}{p}\right) = 1$? *1 point*

- [ ] $p \equiv 1 \pmod{40}$,
- [ ] $p \equiv 3 \pmod{40}$,
- [ ] $p \equiv 7 \pmod{40}$,
- [ ] $p \equiv 9 \pmod{40}$,
- [ ] $p \equiv 11 \pmod{40}$,
- [ ] $p \equiv 13 \pmod{40}$,

No, the answer is incorrect.
Score: 0
Accepted Answers:
$p \equiv 1 \pmod{40}$,
$p \equiv 3 \pmod{40}$,
$p \equiv 9 \pmod{40}$,
$p \equiv 13 \pmod{40}$,

10) Which of the following polynomials $f(x)$ have a root modulo every prime p? *1 point*

- [ ] $(x^2 - 2)(x^2 - 3)(x^2 - 6)$,
- [ ] $(x^2 - 2)(x^2 - 5)(x^2 - 8)$,
- [ ] $(x^2 - 3)(x^2 - 5)(x^2 - 15)$,
- [ ] $(x^2 - 3)(x^2 - 6)(x^2 - 9)$,
- [ ] $(x^2 - 5)(x^2 - 7)(x^2 - 35)$,
- [ ] $(x^2 - 5)(x^2 - 7)(x^2 - 11)$.

No, the answer is incorrect.
Score: 0
Accepted Answers:
$(x^2 - 2)(x^2 - 3)(x^2 - 6)$,
$(x^2 - 3)(x^2 - 5)(x^2 - 15)$,
$(x^2 - 3)(x^2 - 6)(x^2 - 9)$,
$(x^2 - 5)(x^2 - 7)(x^2 - 35)$,