

1.

$$2027^{2025} \bmod 6$$

ni toping.

- A) 0
- B) 1
- C) 3
- D) 5

2. Quyidagi ifodaning mod 4 dagi qiymatini toping:

$$n^2(n^2 + 1)$$

- A) 0
- B) 1
- C) 2
- D) Har doim 0

3. Quyidagilardan qaysi biri 9 ga bo'linadi?

- A) $10^{2025} - 1$
- B) $2025^{2024} - 1$
- C) $3^{2024} + 1$
- D) 111111

4. Quyidagi tenglamadan qaysi biri butun yechimga ega?

- A) $x^2 + y^2 = 3$
- B) $x^2 + y^2 = 7$
- C) $x^2 + y^2 = 13$
- D) $x^2 + y^2 = 6$

5. Agar

$$a \equiv 2 \pmod{5}$$

bo'lsa, $a^4 \bmod 5$ nimaga teng?

- A) 1
- B) 2
- C) 3
- D) 4

6. Quyidagilardan qaysi biri toq son bo'la olmaydi?

- A) $n^2 + n + 1$
- B) $n^2 + 1$
- C) $n(n + 1) + 1$
- D) $n^2 + n$

7. Agar

$$x \equiv 3 \pmod{7}$$

bo'lsa, $x^2 + x \bmod 7$ ni toping.

- A) 0
- B) 1
- C) 2
- D) 5

8. Quyidagilardan qaysisida **har doim** 3 ga bo'linish mavjud?

- A) $n^3 - n$
- B) $n^3 - 1$
- C) $n^2 - n$
- D) $n^3 + 1$

9. Agar $a \mid (b - c)$ va $a \mid (b + c)$ bo'lsa, quyidagilardan qaysi biri to'g'ri?

- A) $a \mid b$
- B) $a \mid c$
- C) $a \mid 2b$
- D) $b \mid c$

10. Quyidagi tenglamalardan qaysi biri **imkonsiz**?

- A) $x^2 \equiv 1 \pmod{4}$
- B) $x^2 \equiv 2 \pmod{4}$
- C) $x^2 \equiv 0 \pmod{4}$
- D) $x^2 \equiv 1 \pmod{8}$

11. Agar $x^2 \equiv 1 \pmod{8}$ bo'lsa, x qanday?

- A) Juft
- B) Toq
- C) 4 ga karrali
- D) 8 ga karrali

12. Quyidagilardan qaysi biri **tub son bo'lishi mumkin**?

- A) $n^2 + n$
- B) $n^2 + 1$
- C) $n^2 - 1$
- D) $n(n + 1)$

13. Quyidagi ifodaning mod 11 dagi qiymati: 10^{2024} ga teng:

- A) 0
- B) 1
- C) -1
- D) 10

14. Quyidagi sonlardan qaysi biri **har doim juft**?

- A) $n^2 + 1$
- B) $n^2 + n$
- C) $n^2 + n + 1$
- D) $n^3 + 1$

15. Agar $EKUB(a, b) = 1$ va $a \mid b^2$ bo'lsa, qaysi xulosa to'g'ri?

- A) $a = 1$
- B) $a = b$
- C) $a \mid b$
- D) $b \mid a$

16. Quyidagi tenglamadan qaysi biri **faqat trivial yechimga ega**?

- A) $x^2 - 2y^2 = 1$
- B) $x^2 + y^2 = z^2$
- C) $x^2 + y^2 = 3z^2$
- D) $x^2 - 5y^2 = 1$

17. Agar $n \equiv 2 \pmod{3}$ bo'lsa, $n^2 + n + 1 \pmod{3}$ nimaga teng?

- A) 0
- B) 1
- C) 2
- D) 3

18. Quyidagi qaysi ifoda **hech qachon 7 ga bo'linmaydi**?

- A) $n^3 + n$
- B) $n^3 - n$
- C) $2^{3n} - 1$
- D) $10^n + 4$

19. Agar $a \equiv b \pmod{m}$ bo'lsa, doim qaysi tenglik to'g'ri?

- A) $a = b$
- B) $a - b \equiv 0 \pmod{m}$
- C) $a / b \in \mathbb{Z}$
- D) $a^b \equiv b^a \pmod{m}$

20. Quyidagi sonlarning qaysi biri **mod 9 da 0 ga teng**?

- A) 123456
- B) 9999991
- C) $10^{100} - 1$
- D) 3^{2024}

TO‘G‘RI JAVOBLAR

1. **B**
2. **D**
3. **D**
4. **C**
5. **A**
6. **D**
7. **B**
8. **A**
9. **C**
10. **B**
11. **B**
12. **B**
13. **C**
14. **B**
15. **C**
16. **C**
17. **B**
18. **D**
19. **B**
20. **C**