INTENSE PRACTICE ACADEMY

NUMBER SYSTEM – FULL FREE PDF

Q1. Find the HCF of 36 and 84.
a) 6
b) 12
c) 18
d) 24
Answer: a) 6
Explanation:
Step 1: 36 = 2^2 x 3^2 and 84 = 2^2 x 3 x 7.
Step 2: Common powers = 2^2 and 3.
Step 3: HCF = 4 x 3 = 6.

Q2. Find the LCM of 24, 36 and 60.
a) 180
b) 360
c) 720
d) 840
Answer: c) 720
Explanation:
Step 1: 24 = 2^3 x 3; 36 = 2^2 x 3^2; 60 = 2^2 x 3 x 5.
Step 2: Highest powers → 2^3, 3^2, 5.
Step 3: LCM = 720.

Q3. What is the unit digit of 8^53?
a) 2
b) 4
c) 6
d) 8
Answer: d) 8
Explanation:
Step 1: Pattern = 8,4,2,6.
Step 2: 53 mod 4 = 1.
Step 3: 1st term = 8.

Q4. Find the smallest number divisible by 12, 18 and 30.
a) 90
b) 120
c) 180
d) 240
Answer: c) 180
Explanation:
Step 1: LCM(12,18,30)=180.

Q5. A number gives remainder 1 when divided by 2,3,4.

a) 7
b) 10
c) 13
d) 25
Answer: c) 13
Explanation:
Step 1: LCM +1 =13.

Q6. Greatest 4-digit number divisible by 12?
a) 9996
b) 9992
c) 9988
d) 9984
Answer: a) 9996
Explanation:
Step 1: 9999 mod 12 =3.
Step 2: 9999-3=9996.

Q7. Unit digit of 3^67?
a) 1
b) 3
c) 7
d) 9
Answer: c) 7
Explanation:
Step 1: Pattern:3,9,7,1.
Step 2: 67 mod4 =3.
Step 3: 3rd term=7.

Q8. How many numbers ≤100 are divisible by 6?
a) 14
b) 16
c) 18
d) 20
Answer: b) 16
Explanation:
Largest multiple=96 → 96/6=16.

Q9. HCF(45,75,120)
a) 5
b) 10
c) 15
d) 30

Answer: c) 15
Explanation:
Common factors → 3 & 5 → HCF=15.

Q10. LCM(8,20)?
a) 20
b) 40
c) 60
d) 80
Answer: b) 40
Explanation:
LCM =2^3 x5 =40.

Q11. Sum of digits=9 means?
a) Divisible by 2
b) Divisible by 5
c) Divisible by 9
d) Prime
Answer: c) Divisible by 9
Explanation:
Rule: Sum divisible by 9 → number divisible by 9.

Q12. Smallest number leaving remainder 4 when divided by 7?
a) 4
b) 7
c) 9
d) 11
Answer: a) 4
Explanation:
Smallest 7k+4 → 4.

Q13. Which is divisible by 11?
a) 242
b) 324
c) 418
d) 539
Answer: a) 242
Explanation:
(2+2)-4=0 → divisible.

Q14. Unit digit of 2^150?
a) 2
b) 4

c) 6
d) 8
Answer: b) 4
Explanation:
Pattern=2,4,8,6.
150 mod4=2 → 2nd term=4.

Q15. No. of factors of 72?
a) 6
b) 8
c) 10
d) 12
Answer: d) 12
Explanation:
72=2^3 x3^2 → (3+1)(2+1)=12.

Q16. LCM(14,21)?
a) 14
b) 21
c) 28
d) 42
Answer: d) 42
Explanation:
LCM =2 x3 x7 =42.

Q17. HCF(96,404)?
a) 2
b) 4
c) 6
d) 8
Answer: b) 4
Explanation:
Both share 2^2 → HCF=4.

Q18. Last two digits of 13^5?
a) 13
b) 43
c) 53
d) 93
Answer: d) 93
Explanation:
Multiply stepwise → final=93.

Q19. Smallest 5-digit no divisible by 27?
a) 10017
b) 10026
c) 10044
d) 10062
Answer: a) 10017
Explanation:
10000/27=370 → next=371 → 10017.

Q20. HCF of 18^2 and 12^2?
a) 18
b) 36
c) 54
d) 72
Answer: b) 36
Explanation:
HCF(18,12)=6 → 6^2=36.