

STRATEGIC MATH SERIES

NUMBER SYSTEM

REMAINDER

LEVEL: INTERMEDIATE

Finding remainders can be little tedious when we solve for exponents. The questions for the competitive series on exams will not be easy it can be time consuming, so we work on the strategies by just looking at the numbers applying the rules and we get the answers in few seconds.

RULE # 1:

- Find the difference between the number to be divided and the divisor.
- If the difference is ALWAYS is 1 then the remainder will always be 1. Since 1 raised to any power will always be 1.

Qu.1 What is the remainder when 8^{13} is divided by 7?

- a. 3 b. 1 c. 4 d. 5

Sol. Check the Difference $8-7=1$

$$1^{13} = 1$$

Hence Ans is b.

Qu.2 What is a reminder if 28^{200} is divided by 27?

- a. 2 b. 5 c. 1 d. 8

Qu. What is the remainder if 31^{175} is divided by 30?

- a. 5. b. 7 c. 14 d. 1

STRATEGIC MATH SERIES

NUMBER SYSTEM

REMAINDER

LEVEL: INTERMEDIATE

RULE # 2: If the number to be divided has EVEN power and is divided by a number which is less than by one from the original number, then the remainder is 1.

Rule # 3: If the number to be divided has ODD power and is divided by a number more than by 1 from the original number to be divided, then, the Remainder will always be the Number itself.

Rule # 4: If the number to be divided has ODD power and is divided by a number more than by one from the original number to be divided, then, the Remainder will always be the Number itself.

Rule # 5: If The number with the EVEN power is divided by a number more than by one from it then the remainder is always 1.

STRATEGIC MATH SERIES

NUMBER SYSTEM

REMAINDER

LEVEL: INTERMEDIATE

PRACTICE 1

Find the remainder for the following questions.

1. $5^{31} \div 4$
2. $15^{80} \div 14$
3. $28^{82} \div 27$
4. $25^{26} \div 26$
5. $9^{31} \div 8$
6. $30^{91} \div 31$
7. $17^{200} \div 16$
8. $17^{200} \div 18$
9. $20^{450} \div 21$
10. $78^{58} \div 79$
11. $18^{22} \div 19$
12. $51^{65} \div 52$
13. $82^{88} \div 83$
14. $23^{69} \div 24$
15. $179^{66} \div 178$

STRATEGIC MATH SERIES

NUMBER SYSTEM

REMAINDER

LEVEL: INTERMEDIATE

PRACTICE 2

Find the remainder for the following questions.

1. $2^{91} \div 3$
2. $4^{48} \div 6$
3. $30^{91} \div 37$
4. $45^{25} \div 51$
5. $34^{82} \div 36$
6. $30^{91} \div 31$
7. $67^{67} + 67 \div 68$
8. $87^{77} + 87 \div 88$
9. $107^{88} + 107 \div 105$