Topics: Problems on Number System

Instructor:

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1. Which of the following is a prime number ?

A. 33
B. 81
C. 93
D. 97

81 = 9 5/0

373 = 6

93 = 12

70
-16
63

8 x 2 = 16

2 | 7 5 8 | 114
2
9
7
28
28

2. What is the unit digit in $\{(6374)^{1793} \times (625)^{317} \times (341^{491})\}$?

A. 0
B. 2
C. 3
D. 5

$4^1 = 4$ $\quad 5^1 = 5$

$4^2 = 16$ $\quad 5^2 = 25$

$4^3 = 64$ $\quad 5^3 = 125$

$4 \times 5 \times 1 = 20$

$3^1 = 3$

$3^2 = 9$

$3^3 = 27$

$3^4 = 81$

$3^5 = 243$

$3^6 = 729$

7

1

3. The difference of two numbers is 1365. On dividing the larger number by the smaller, we get 6 as quotient and the 15 as remainder. What is the smaller number ?

A. 240
B. 270
C. 295
D. 360

L S
$x > y$

$x - y = 1365$
$\Rightarrow x = 1365 + y$

ATQ,

$x = 6y + 15$

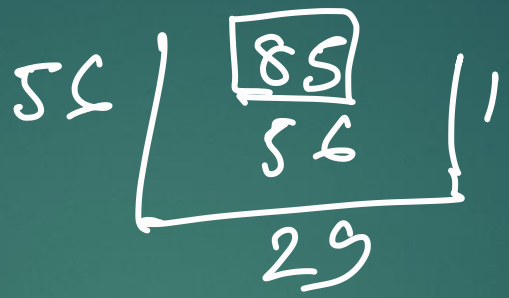
$\Rightarrow 1365 + y = 6y + 15$

$\Rightarrow 5y = 1350$

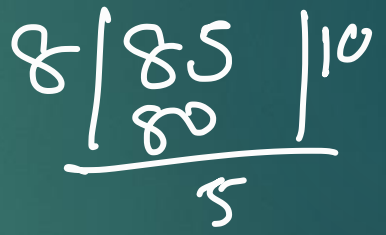
$\therefore y = 270$

4. On dividing a number by 56, we get 29 as remainder. On dividing the same number by 8, what will be the remainder ?

A. 4
B. 5
C. 6
D. 7



$56 + 29 = 85$



5. If one-third of one-fourth of a number is 15, then three-tenth of that number is:

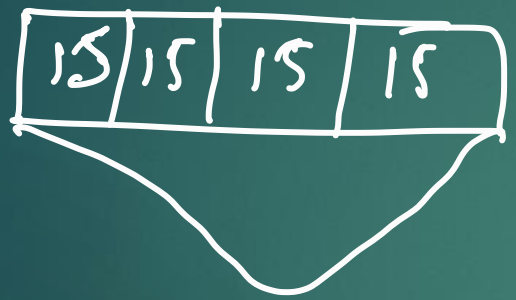
A. 35
B. 36
C. 45
D. ~~54~~

60

1/4

180

180

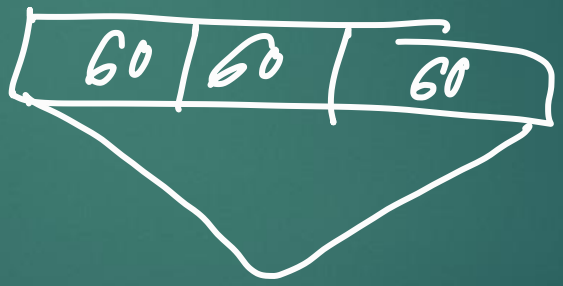


60

3/10

18
3
54

184/12 = 18



180

10 | 180 |

54

6. The difference between a two-digit number and the number obtained by interchanging the positions of its digits is 36. What is the difference between the two digits of that number?

A. 4
B. 8
C. 16
D. None of these

unit place = y
tens " = x

26 → 4
62 → 4

$10x + y - (10y + x) = 36$

$\Rightarrow 9x - 9y = 36$

7. The difference between a two-digit number and the number obtained by interchanging the digits is 36. What is the difference between the sum and the difference of the digits of the number if the ratio between the digits of the number is 1 : 2 ?

A. 4
B. 8
C. 16
D. None of these

$x = 2y$

$x - y = 4$

$\Rightarrow 2y - y = 4$

$\Rightarrow y = 4$

$x = 2y$

$x = 8 \quad y = 4$

$12 - 4$

$= 8$

the sum — The difference

$x+y$ — $(x-y)$

$= x+y - x+y$

$= 2y$

$= 2 \times 4$

$= 8$

8. A two-digit number is such that the product of the digits is 8. When 18 is added to the number, then the digits are reversed. The number is:

~~A.~~ 18
B. 24
~~C.~~ 42
~~D.~~ 81

18 81
18+18 = 36
24+18 = 42
42+18 = 60
81+18 = 99
18

$x \nearrow y = 8$

$10x + y + 18 = 10y + x$

$\Rightarrow 9x - 9y = -18$

$\Rightarrow x - y = -2 \Rightarrow -y = -2 - x$

$\Rightarrow y = x + 2 \Rightarrow y = 2 + x$

$xy = 8$

$\Rightarrow x(x+2) = 8$

$\Rightarrow x^2 + 2x - 8 = 0$

$\Rightarrow x^2 + 4x - 2x - 8 = 0$

$(x+4)(x-2) = 0$

$x = -4$

digit can not be neg.

$\therefore x = 2$

$y = 4$

24

9. The sum of the digits of a two-digit number is 15 and the difference between the digits is 3. What is the two-digit number?

A. 69
B. 78
C. 96
D. Cannot be determined
E. None of these

$6+9=15$ $\quad 9-6=3$

$7+8=15$ $\quad 8-2=6$

$9+6=15$ $\quad 9-6=3$ $\quad 6-3=$

Absolute value

10. A number consists of two digits. If the digits interchange places and the new number is added to the original number, then the resulting number will be divisible by:

A. 3
B. 5
C. 9
~~D. 11~~

$10x+y + 10y+x$

$= 11x + 11y$

$= 11(x+y)$

y – unit digit

x = ten's digit

$10x+y+10y+x$

$= 11x+11y$

$= 11(x+y)$

11. In a two-digit, if it is known that its unit's digit exceeds its ten's digit by 2 and that the product of the given number and the sum of its digits is equal to 144, then the number is:

A. 24
B. 26
C. 42
D. 46

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$24 \times (2+4) = 24 \times 6 = 144$

$46 \times (4+6) = 460$

given number × TS

$24 \times (2+4)$

$= 24 \times 6$

$= 144$

12. Find a positive number which when increased by 17 is equal to 60 times the reciprocal of the number.

~~A. 3~~
~~B. 10~~
~~C. 17~~
~~D. 20~~

$3+17 = 20$
$10+17 = 27$
$13+17 = 30$
$20+17 = 37$

$\frac{1}{5} \times 60 = 20$
$\frac{1}{10} \times 60 = 6$
$\frac{1}{x} \times 60 = \square$
$\frac{1}{20} \times 60 = 3$

$x + 17 = \frac{1}{x} \times 60$
$\Rightarrow x^2 + 17x - 60 = 0$
$\Rightarrow x^2 + 20x - 3x - 60 = 0$
$\Rightarrow (x+20)(x-3) = 0$
$x = -20$
$x = 3$

13. The product of two numbers is 9375 and the quotient, when the larger one is divided by the smaller, is 15. The sum of the numbers is:

A. 380
B. 395
C. 400
D. 425

$xy = 9375 \quad x > y$

$\frac{x}{y} = 15 \Rightarrow x = 15y \quad = 15 \times 25 = 375$

$\Rightarrow 15y \times y = 9375$

$\Rightarrow 15y^2 = 9375$

$\Rightarrow y^2 = 625$

$\Rightarrow y = 25$

$375 + 25 = 400$

14. A number consists of 3 digits whose sum is 10. The middle digit is equal to the sum of the other two and the number will be increased by 99 if its digits are reversed. The number is:

A. 145 = 10
B. 253 = 10
C. 370 = 10
D. 352 = 10

$4 \neq 6$
$5 = 5$
$7 \neq 3$
$5 = 5$

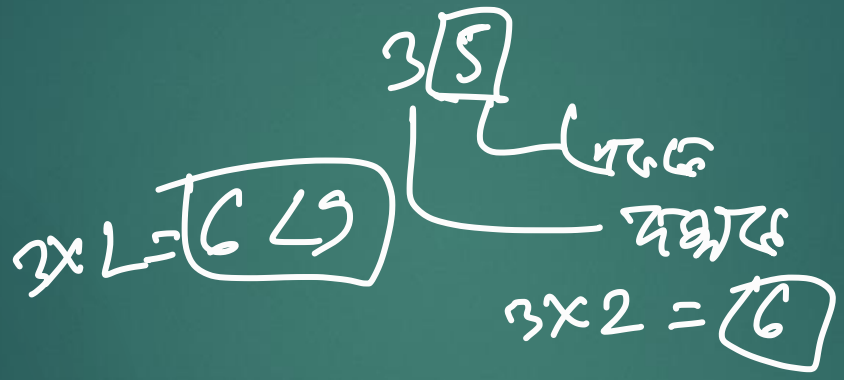
352
252
253

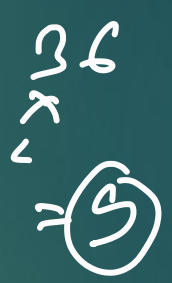
145
321
541

$100x + 10y + z$
$100z + 10y + x$

15. In a two-digit number, the digit in the unit's place is more than twice the digit in ten's place by 1. If the digits in the unit's place and the ten's place are inter-changed, difference between the newly formed number and the original number is less than the original number by 1. What is the original number ?

(a) 35 (b) 36
(c) 37 (d) 39





16. Three numbers are in the ratio 4 : 5 : 6 and their average is 25. The largest number is :

$4x + 5x + 6x = \frac{15x}{3} = 5x$

$5x = 25$

$x = 5$

$6 \times 5 = 30$

Ans 30

Recent Bank Preli Questions

1. If 9 is $3/4^{th}$ of n, what number is $5/6^{th}$ of n ?

A. 12
B. 15
C. 10
D. 12.5

2. Which of the following is greater than 1?

A. $\frac{0.0004}{0.005}$

B. $\frac{0.01}{0.003}$

C. $\frac{0.003}{0.006}$

D. $\frac{0.001}{0.01}$

3. The average of two number is 62. if 2 is added to the smaller number, the ratio between the numbers becomes 1:2. what is the smaller number?

A. 40
B. 42
C. 38
D. 60

4. 1/3+1/3 is equal to how many twelfth?

A. 6
B. 8
C. 10
D. 12

5. The difference between two number is 5 and the difference between their square is 65. what is the smaller number?

A. 4

B. 5

C. 11

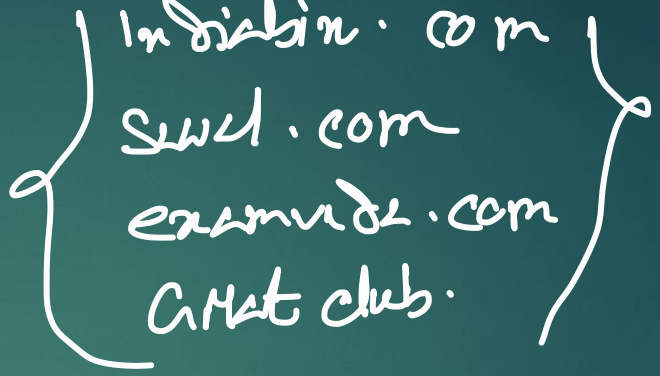
D. 13

6. The average of five consecutive integers is X. If the next two numbers are added, how shall the average vary?

A. It shall increased by 1.
B. It shall increased by 1.5
C. It shall increased by 2
D. It shall remain the same

7. The number 3 divides ‘a’ with a result of ‘b’ and a reminder of 2. The number 3 divides ‘b’ with a result of 2 and a reminder of 1. What is the value of ‘a’ ?

A. 18
B. 20
C. 23
D. 22



Thank You