



MATHS

BOOKS - NCERT EXEMPLAR

PLAYING WITH NUMBERS

Solved Example

1. Generalised form of a three-digit number xyz

is

A. $x + y + z$

B. $100x + 10y + z$

C. $100z + 10y + x$

D. $100y + 10x + z$

Answer: B



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2. The usual form of $100a + b + 10c$ is

A. abc

B. cab

C. bac

D. acb

Answer: D



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3. If $5 \times A = CA$ then the values of A and C are

A. $A = 5, C = 1$

B. $A = 4, C = 2$

C. $A = 5, C = 2$

D. $A = 2, C = 5$

Answer: C



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4. If $5A + 25$ is equal to B^2 , then the value of A

+ B is

A. 15

B. 10

C. 8

D. 7

Answer: A



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5. The number $ab - ba$ where a and b are digits and $a > b$ is divisible by _____.



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6. When written in usual form $100a + 10c + 9$ is equal to _____.



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7. If $AB \times B = 9B$, then $A =$ _____, $B =$ _____.



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8. If abc , cab , bca are three digit numbers formed by the digits a , b , and c then the sum of these numbers is always divisible by 37.



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9. state whether the statement are true (T) or false (F)

Let ab be a two-digit number, then $ab + ba$ is divisible by 9.



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10. state whether the statement are true (T) or false (F)

If a number is divisible by 2 and 4, then it will be divisible by 8.



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11. state whether the statement are true (T) or false (F)

A three-digit number $42x$ is divisible by 9. Find the value of x .



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12. Find the value of A and B if

$$\begin{array}{r} 41 A \\ + B 4 \\ \hline 512 \end{array}$$



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13. Suppose that the division $x \div 5$ leaves a remainder 4 and the division $x \div 2$ leaves a remainder 1. Find the ones digit of x .



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14. If $756x$ is divisible by 11, where x is a digit find the value of x .



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Exercise Write The Correct Answer

1. Generalised form of a four-digit number $abcd$ is

A. $1000a + 100b + 10c + d$

B. $1000a + 100c + 10b + d$

C. $1000a + 100b + 10d + c$

D. $a \times b \times c \times d$

Answer:



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2. Generalised form of a two-digit number xy is

A. $x + y$

B. $10x + y$

C. $10x - y$

D. $10y + x$

Answer:



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3. The usual form of $1000a + 10b + c$ is

A. abc

B. $abco$

C. $aobc$

D. aboc

Answer:



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4. Let abc be a three-digit number. Then $abc - cba$ is not divisible by

A. 9

B. 11

C. 18

D. 33

Answer:



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5. The sum of all the numbers formed by the digits x , y and z of the number xyz is divisible by

A. 11

B. 33

C. 37

D. 74

Answer:



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6. A four-digit number $aabb$ is divisible by 55.

Then possible value(s) of b is/are

A. 0 and 2

B. 2 and 5

C. 0 and 5

D. 7

Answer:



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7. Let abc be a three digit number. Then $(abc + bca + cab)$ is not divisible by

A. $a + b + c$

B. 3

C. 37

D. 9

Answer:



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8. A four-digit number $4ab5$ is divisible by 55.

Then the value of $b - a$ is

A. 0

B. 1

C. 4

D. 5

Answer:



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9. If abc is a three digit number, then the number $abc - a - b - c$ is divisible by

A. 9

B. 90

C. 10

D. 11

Answer:



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10. A six-digit number is formed by repeating a three-digit number. For example 256256, 678678, etc. Any number of this form is divisible by

A. 7 only

B. 11 only

C. 13 only

D. 1001

Answer:



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11. If the sum of digits of a number is divisible by three, then the number is always divisible by

A. 2

B. 3

C. 6

D. 9

Answer:



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12. If $x + y + z = 6$ and z is an odd digit, then the three-digit number xyz is

A. an odd multiple of 3

B. odd multiple of 6

C. even multiple of 3

D. even multiple of 9

Answer:



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13. If $5A + B3 = 65$, then the value of A and B is

A. $A = 2, B = 3$

B. $A = 3, B = 2$

C. $A = 2, B = 1$

D. $A = 1, B = 2$

Answer:



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14. If $A^3 + 8B = 150$, then the value of $A + B$ is

A. 13

B. 12

C. 17

D. 15

Answer:



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15. If $5A \times A = 399$, then the value of A is

A. 3

B. 6

C. 7

D. 9

Answer:



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16. If $6A \times B = A8B$, then the value of $A - B$ is

A. -2

B. 2

C. -3

D. 3

Answer:



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17. Which of the following numbers is divisible
by 99

A. 913462

B. 114345

C. 135792

D. 3572406

Answer:



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Exercise Fill In The Blanks

1. 3134673 is divisible by 3 and _____.



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2. $20x3$ is a multiple of 3 if the digit x is _____
or _____ or _____.



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3. fill in the blank to make the statement true.

$3x5$ is divisible by 9 if the digit x is _____.



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4. fill in the blank to make the statement true.

The sum of a two-digit number and the number obtained by reversing the digits is always divisible by _____.



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5. fill in the blank to make the statement true.

The difference of a two-digit number and the number obtained by reversing its digits is always divisible by _____.





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6. fill in the blank to make the statement true.

The difference of three-digit number and the number obtained by putting the digits in reverse order is always divisible by 9 and _____.



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7. fill in the blank to make the statement true.

$$\text{If } \begin{array}{r} 2 \quad B \\ +A \quad B \\ \hline 8 \quad A \end{array} \text{ then } A = \underline{\hspace{2cm}} \text{ and } B = \underline{\hspace{2cm}}.$$



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8. fill in the blank to make the statement true.

$$\text{If } \begin{array}{r} A \quad B \\ \times B \\ \hline 9 \quad 6 \end{array} \text{ then } A = \underline{\hspace{2cm}} \text{ and } B = \underline{\hspace{2cm}}.$$



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9. fill in the blank to make the statement true.

$$B \quad 1$$

If $\frac{\quad \times B}{4 \quad 9B}$ then $B = \underline{\hspace{2cm}}$.



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10. fill in the blank to make the statement true.

1 x 35 is divisible by 9 if $x = \underline{\hspace{2cm}}$.



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11. fill in the blank to make the statement true.

A four-digit number $abcd$ is divisible by 11, if d

$+ b = \underline{\hspace{2cm}}$ or $\underline{\hspace{2cm}}$



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12. A number is divisible by 11 if the difference between the sums of the digits in odd and even places respectively is a multiple of 3 (b) a multiple of 5 zero or a multiple of 7 (e) zero or a multiple of 11





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13. fill in the blank to make the statement true.

If a 3-digit number abc is divisible by 11, then

_____ is either 0 or multiple of 11.



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14. fill in the blank to make the statement true.

If $A \times 3 = 1A$, then $A =$ _____.



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15. If $B \times B = AB$, then either $A = 2, B = 5$ or $A =$ _____, $B =$ _____.



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16. If the digit 1 is placed after a 2-digit number whose tens is t and ones digit is u , the new number is _____.



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1. State whether the statement given is true (T) or false (F):

A two-digit number ab is always divisible by 2 if b is an even number.



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2. State whether the statement given is true (T) or false (F):

A three-digit number abc is divisible by 5 if c is an even number.



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3. State whether the statement given is true (T) or false (F):

A four-digit number $abcd$ is divisible by 4 if ab is divisible by 4



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4. State whether the statement given is true (T) or false (F):

A three-digit number abc is divisible by 6 if c is an even number and $a + b + c$ is a multiple of 3.



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5. State whether the statement given is true (T) or false (F):

Number of the form $3N + 2$ will leave remainder 2 when divided by 3



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6. State whether the statement given is true (T) or false (F):

Number $7N + 1$ will leave remainder 1 when divided by 7.



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7. State whether the statement given is true (T) or false (F):

If a number a is divisible by b , then it must be divisible by each factor of b .



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8. State whether the statement given is true (T) or false (F):

If $AB \times 4 = 192$, then $A + B = 7$.



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9. State whether the statement given is true (T) or false (F):

If $AB + 7C = 102$, where $B \neq 0$, $C \neq 0$, then $A + B + C = 14$.



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10. State whether the statement given is true (T) or false (F):

If $213x27$ is divisible by 9, then the value of x is 0.



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11. State whether the statement given is true (T) or false (F):

If $N \div 5$ leaves remainder 3 and $N \div 2$ leaves remainder 0, then $N \div 10$ leaves remainder 4.



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Exercise

1. Find the least value that must be given to number a so that the number $91876a2$ is divisible by 8.



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2. If $\frac{1 \quad P}{Q \quad 6} \times \frac{P}{6}$ where $Q - P = 3$, then find the

values of P and Q.



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3. If $1AB + CCA = 697$ and there is no carry-over in addition, find the value of $A + B + C$.



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4. A five-digit number AABAA is divisible by 33.

Write all the numbers of this form.



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5. Find the value of the letters in the following questions.

$$\begin{array}{r} A \quad A \\ +A \quad A \\ \hline \underline{XA \quad Z} \end{array}$$



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6. Find the value of the letters in the following question.

$$\begin{array}{r} 8 \quad 5 \\ +4 \quad A \\ \hline BC \quad 3 \end{array}$$



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7. Find the value of the letters in the following question.

$$\begin{array}{r} B \quad 6 \\ +8 \quad A \\ \hline CA \quad 2 \end{array}$$



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8. Find the value of the letters in the following question.

$$\begin{array}{r} 1 \text{ B A} \\ + \text{A B A} \\ \hline 8 \text{ B 2} \end{array}$$



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9. Find the value of the letters in the following questions.

$$\begin{array}{r} \text{C B A} \\ + \text{C B A} \\ \hline 1 \text{ A 3 0} \end{array}$$



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10. Find the value of the letters in the following question.

$$\begin{array}{r} B \ A \ A \\ +B \ A \ A \\ \hline 3 \ A \ 8 \end{array}$$



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11. Find the value of the letters in the following questions.

$$\begin{array}{r}
 A\ 0\ 1\ B \\
 +1\ 0\ A\ B \\
 \hline
 B\ 1\ 0\ 8
 \end{array}$$



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12. Find the value of the letters in the following questions.

$$\begin{array}{r}
 A\ A \\
 \times\ A \\
 \hline
 C\ A\ B
 \end{array}$$



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13. Find the value of the letters in the following questions.

$$\begin{array}{r} A \ B \\ -B \ 7 \\ \hline 4 \ 5 \end{array}$$



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14. If $2A7 \div A=33$, then find the value of A.



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15. $212x5$ is a multiple of 3 and 11. Find the value of x .



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16. Find the value of k where $31k2$ is divisible by 6.



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17. $1y3y6$ is divisible by 11. Find the value of y .



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18. $756x$ is a multiple of 11, find the value of x .



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19. A three-digit number $2a3$ is added to the number 326 to give a three-digit number $5b9$ which is divisible by 9. Find the value of $b - a$



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20. Let $E = 3$, $B = 7$ and $A = 4$. Find the other digits in the sum

$$\begin{array}{r} B A S E \\ + B A L L \\ \hline G A M E S \end{array}$$



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21. Let $D = 3$, $L = 7$ and $A = 8$. Find the other digits in the sum

$$\begin{array}{r} M A D \\ + A S \\ + A \\ \hline B U L L \end{array}$$



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22. If from a two-digit number, we subtract the number formed by reversing its digits then the result so obtained is a perfect cube. How many such numbers are possible? Write all of them.



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23. Work out the following multiplication.

$$\begin{array}{r} 12345679 \\ \times \quad 9 \\ \hline \hline \end{array}$$

Use the result to answer the following questions.

(a) What will be 12345679×45 ?

(b) What will be 12345679×63 ?

(c) By what number should 12345679 be multiplied to get 888888888?

(d) By what number should 12345679 be multiplied to get 999999999?



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24. Find the value of the letters of the following:

$$\begin{array}{r} PQ \\ \times 6 \\ \hline QQQ \\ \hline \end{array}$$



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25. Find the value of the letters of the following:

$$\begin{array}{r} 2LM \\ +LM1 \\ \hline M18 \\ \hline \end{array}$$



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26. If 148101B095 is divisible by 33, find the value of B.



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27. If 123123A4 is divisible by 11, find the value of A.



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28. If $56 \times 32y$ is divisible by 18, find the least value of y



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Application Games And Puzzles

1. Put tick mark in the appropriate boxes if the given numbers are divisible by any of 2, 3, 4, 5,

6, 8, 10, 11 numbers.

| S.No. | Number | Divisible by | | | | | | | | | |
|-------|----------|--------------|---|---|---|---|---|---|---|----|----|
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1. | 40185 | | | | | | | | | | |
| 2. | 92286 | | | | | | | | | | |
| 3. | 56390 | | | | | | | | | | |
| 4. | 419562 | | | | | | | | | | |
| 5. | 10593248 | | | | | | | | | | |



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Think And Discuss

1. What would be the value of y , if $277y$ is divisible by 11?



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