

NUMERICAL

OPERATION

✓ गणितीय संक्रियाएँ

If + means −, − means ×, × means ÷, and ÷ means +, what will be the value of the following expression?

यदि + का अर्थ − है, − का अर्थ × है, × का अर्थ ÷ है, और ÷ का अर्थ + है, तो निम्नलिखित अभिव्यक्ति का मान क्या होगा?

$$3 + 6 + 3 \times 4 \div 4 = ?$$

(a) 8

(b) 5

☒ (c) 6

(d) 4

$$3 + 6 - 3 = 6$$

Select the correct combination of mathematical signs to sequentially replace the * signs and balance the given equation.

* चिह्नों को क्रमिक रूप से बदलने और दिए गए समीकरण को संतुलित करने के लिए गणितीय चिह्नों के सही संयोजन का चयन करें।

सही

(a) $\times + \div -$

(b) $\div \times + -$

(c) $\div - + \times$

(d) $+ \times \div -$

QUESTIONS

1

✓ BODMAS

In BODMAS, the vinculum ($\bar{}$) is used to:

BODMAS में विन्कुलम ($\bar{}$) का उपयोग किया जाता है:

- ✓ A) Show priority of operations वरीयता दर्शाने के लिए
- B) Divide numbers ✗
- C) Multiply terms ✗
- D) Cancel terms ✗

QUESTIONS



2

$$36 \div (12 + 6)$$

$$36 \div (12 + 6)$$

$$36 \div 18 = 2$$

Solve: ~~36 : (12 + 6)~~

हल करें: ~~36 : (12 + 6)~~

A) 3

☒ B) 2

C) 6

D) 4

$$36 \div 12 + 6$$

$3 + 6 = 9$

(a) 8

☒ (b) 9

(c) 2

(d) 4

3

Which operation is performed first according to BODMAS?

BODMAS के अनुसार सबसे पहले कौन-सा क्रियाकलाप किया जाता है?

☒ A) Brackets/Vinculum **ब्रेकेट/बार**

B) Division **भाग**

C) Addition **जोड़**

D) Multiplication **गुणा**

QUESTIONS



4

Solve: ~~$100 = (25 - 5)$~~

हल करें: ~~$100 = (25 - 5)$~~

A) 10

B) 20

C) 25

☒ D) 5

$$100 \div 25 - 5$$

$$100 \div (25 - 5)$$

$$100 \div 20 = 5$$

$$\begin{array}{r} \textcircled{-1} \\ 4 - 5 \end{array}$$

$$100 \div 25 - 5$$

(a) 0

☒ (b) -1

(c) 5

(d) 25

Q

$$4 \div 4 \div 4 \div 4 \div 4$$

$$a \div b \div c \div d \div e$$

Trick

$$\frac{a}{b \times c \times d \times e}$$

$$\frac{4}{4 \times 4 \times 4 \times 4} = \frac{1}{64}$$

(a) $\frac{1}{16}$

~~(b)~~ $\frac{1}{64}$

(c) 4

(d) 64

L to R ✓

बायें से दायें solve करें
Concept

$$(4 \div 4) \div 4 \div 4 \div 4$$

(I) $(1 \div 4) \div 4 \div 4$

(II) $(\frac{1}{4} \div 4) \div 4$

(III) $\frac{1}{16} \div 4$

(IV) $\frac{1}{64}$

Q₁ $16 \div 4 \div 2 \div 8 \div 4$ $\rightarrow$

$$\frac{\cancel{16}}{4 \times \cancel{2} \times \cancel{8} \times 4} = \frac{1}{16}$$

①

$$\underline{4 \div 2 \div 8 \div 4}$$

②

$$\underline{2 \div 8 \div 4}$$

③

$$\frac{1}{4} \div 4$$

Q₂ $15 \div 3 \div 5 \div 2 \div 3$

$$\frac{\cancel{15}}{\cancel{3} \times \cancel{5} \times 2 \times 3} = \frac{1}{6}$$

~~④~~ $\frac{1}{16}$

$$\underline{5 \div 5 \div 2 \div 3}$$

$$= 1 \div 2 \div 3$$

$$= \frac{1}{2} \div 3$$

$$= \frac{1}{6}$$

$a \times b \times c \times d \times e$

$$\begin{array}{ccc} \overline{5 \times 2} \times \overline{3 \times 4} \times 6 & \longrightarrow & 10 \times 3 \times 24 \\ 10 \times 12 \times 6 & & 720 \\ 10 \times 72 = 720 & & \end{array}$$

$$6 \times \left(\frac{2}{4}\right)$$

$$6 \times \frac{1}{2} = 3 \checkmark$$

$$\leftarrow 6 \times 2 \div 4 \rightarrow \frac{6 \times 2}{4} \Rightarrow \frac{12}{4} = 3$$

$$10 \div 2 \times 4 = \frac{10}{2} \times 4 = 20 \checkmark$$

$$9 \div 3 \times 6$$

$$\frac{9 \times 6}{3} = 18$$

$$\underline{9 \times 3 \div 6}$$

$$\frac{9 \times 3}{6} = \frac{9}{2} = 4.5$$

$$a \times b \div c$$

$$\Rightarrow \frac{ab}{c}$$

$$a \div b \times c$$

$$\Rightarrow \frac{ac}{b}$$

$$\Rightarrow 36 \div 2 \times 4 \div 8$$

$$\frac{36}{2} \times \frac{4}{8} = 9 \checkmark$$

$$a \div b \times c \div d \times e$$

$$\Rightarrow \frac{a \times c \times e}{b \times d}$$

$$15 \div 5 \times 7 \times 8 \div 14$$

$$\frac{15}{5} \times \frac{7}{7} \times \frac{8}{2} = 12 \checkmark$$

$$10 \div 5(1+2)$$

$$10 \div 5(3)$$

$$10 \div 5 \times 3$$

$$2 \times 3 = 6$$

$$\cancel{10 \div 5(3)}$$

$$10 \div 15$$

$$\left(\frac{2}{3}\right) \times$$

QUESTIONS

5

If vinculum is removed from $8 + (\overline{12 - 4})$, which step is done first?

यदि $8 + (\overline{12 - 4})$ से विन्कुलम हटाया जाए, तो सबसे पहले कौन-सा कदम किया जाएगा?

A) $8 + 12$

☒ B) $12 - 4$

C) $8 - 4$

D) None

$$8 + (12 - 4)$$

QUESTIONS



6

$$3 - 8 = -5$$

$$48 \div 16 - 8$$

☒ (a) -5

(b) -3

(c) 6

(d) 12

Solve: ~~$48 \div (16 - 8)$~~

हल करें: ~~$48 \div (16 - 8)$~~

A) 3

☒ B) 6

C) 8

D) 12

$$48 \div 16 - 8$$

$$48 \div 8 = 6$$

QUESTIONS



7

Vinculum $\cong$ preference
वरीयता

The vinculum is similar in meaning to which type of bracket?

विन्कुलम किस प्रकार के ब्रैकेट के समान है?

A) Square **[]**

B) Curly **{ }**

C) Round **()**

☒ D) All of these

QUESTIONS



8

$$15 - 5 \times 2$$

↓

$$15 - 10 = 5 \checkmark$$

Solve: ~~$(15 - 5) \times 2$~~

हल करें: ~~$(15 - 5) \times 2$~~

A) 10

☒ B) 20

C) 30

D) 25

$$\overline{15 - 5} \times 2$$

$$10 \times 2 = 20$$

9

Which one is correct according to BODMAS?

BODMAS के अनुसार कौन-सा सही है?

☒ A) $50 \div (20 - 10) = 5$

B) $50 \div (20 - 10) = 2$

C) $50 \div (20 - 10) = 10$

D) None

$$50 \div 10 = 5$$

QUESTIONS

10

$$\frac{200}{40 \times 5} = \frac{200}{200} = 1$$

$$200 \div 40 \div 5$$

☒ (a) 1

(b) $\frac{1}{5}$

(c) 200

(d) 25

Solve: ~~$200 \div (40 \div 5)$~~

हल करें: ~~$200 \div (40 \div 5)$~~

A) 20

☒ B) 25

C) 40

D) 50

$$200 \div 40 \div 5$$

$$200 \div 8 = 25$$

QUESTIONS

11

$$500 \div 250 \div 50 \div 5$$

$$500 \div 250 \div 10$$

$$(a) 10 \quad 500 \div 25$$

$$(b) 20 \quad = 20$$

$$(c) 500$$

$$(d) 5$$

Solve: ~~$500 \div (250 \div (50 \div 5))$~~

हल करें: ~~$500 \div (250 \div (50 \div 5))$~~

☒ A) 50

B) 10

C) 5

D) 25

$$500 \div 250 \div 50 \div 5$$

$$500 \div \frac{250}{50 \times 5}$$

$$500 \div 1 = 500$$

QUESTIONS



12

Evaluate : $\left(72 \div (36 \div (18 \div 3))\right)$

हल करें: $\left(72 \div (36 \div (18 \div 3))\right)$

☒ A) 12

B) 18

C) 9

D) 6



QUESTIONS



13

Solve: $10 \times \left(100 \div (50 \div (25 \div 5)) \right)$

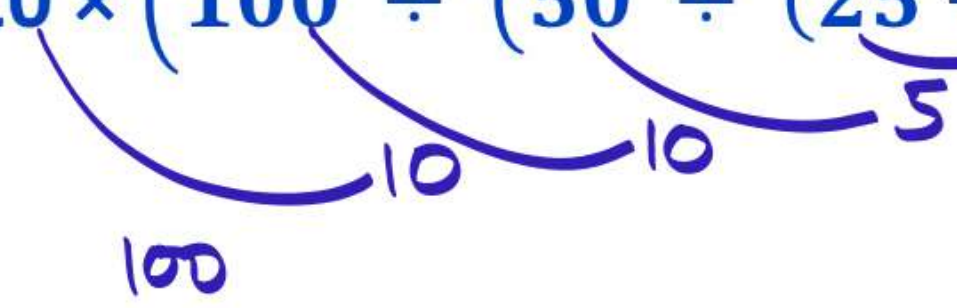
हल करें: $10 \times \left(100 \div (50 \div (25 \div 5)) \right)$

☒ A) 100

B) 200

C) 50

D) 250



QUESTIONS



14

If $X = \left(256 \div (64 \div (16 \div 4)) \right)$, then $X = ?$

यदि $X = \left(256 \div (64 \div (16 \div 4)) \right)$, तो $X = ?$

A) 64

✓ B) 16

C) 8

D) 32



QUESTIONS



15

Simplify: $\left(144 \div \left(48 \div \left(24 \div (12 \div 6)\right)\right)\right)$

सरल करें: $\left(144 \div \left(48 \div \left(24 \div (12 \div 6)\right)\right)\right)$

A) 18

B) 12

C) 24

☒ D) 36



QUESTIONS



16

Simplify: $\left(152 \div \left(128 \div \left(32 \div (16 \div 4)\right)\right)\right)$

हल करें: $\left(152 \div \left(128 \div \left(32 \div (16 \div 4)\right)\right)\right)$

A) 64

B) 32

C) 16

☒ D) 9.5

$$\frac{152}{16} = \frac{76}{8} = \frac{38}{4} = \frac{19}{2}$$

$$\frac{152}{16} = 9.5 \checkmark$$

QUESTIONS



17

Simplify / सरल करें :

$$\left(1000 \div \left(500 \div \left(250 \div (125 \div 25)\right)\right)\right)$$

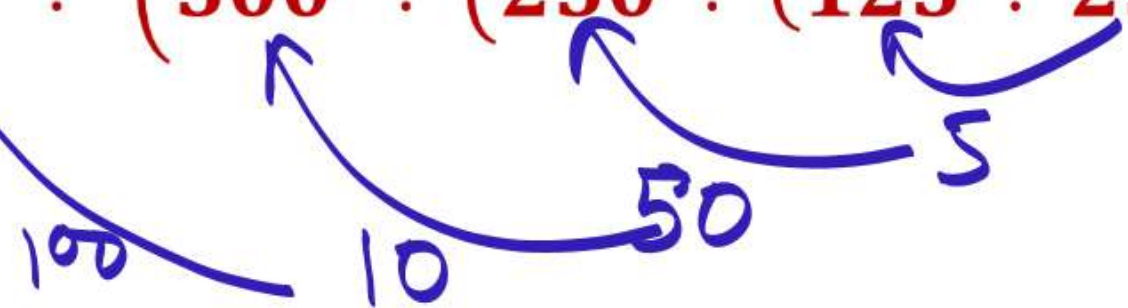
A) 20

B) 25

C) 50

D) 40

~~100~~



QUESTIONS

18

↓

$$225 \div 75 \div 25 \div 15 \div 5$$

$$\frac{225}{75 \times 25 \times 15 \times 5} = \frac{1}{625}$$

Evaluate/ हल करें:

$$\left(225 \div \left(75 \div \left(25 \div (15 \div 5) \right) \right) \right)$$

A) 9

B) 15

☒ C) 25

D) 5

☐ I $225 \div (75 \div (25 \div 3))$

☐ II $225 \div (75 \div \frac{25}{3})$

☐ III $225 \div \left(\frac{75 \times 3}{25} \right)$

☒ IV $225 \div 9 \Rightarrow 25$

QUESTIONS



19

Solve / हल करें:

$$\left(\frac{900}{\div} \left(\frac{300}{\div} \left(\frac{150}{\div} \left(\frac{50}{\div} \left(\frac{25}{\div} 5 \right) \right) \right) \right) \right)$$

A) 15

B) 18

C) 12

D) 20

~~45~~

Handwritten annotations showing the order of operations and intermediate results:

- Arrows indicate the sequence of divisions from the innermost parentheses outwards.
- Intermediate results are written below the arrows: 5, 10, 15, 20, and 45.

QUESTIONS



20

If $Y = \left(1024 \div \left(256 \div \left(64 \div \left(16 \div 4 \right) \right) \right) \right)$, then $Y = ?$

यदि $Y = \left(1024 \div \left(256 \div \left(64 \div \left(16 \div 4 \right) \right) \right) \right)$ तो $Y = ?$

☒ A) 64

B) 128

C) 32

D) 16



QUESTIONS



21

What is 17 mod 5?

17 mod 5 का मान क्या है?

$$17 \div 5 = \begin{array}{c} \text{शेष} \\ 2 \end{array}$$

A) 2

B) 3

C) 5

D) 4

mod $\rightarrow$ Remainder
शेषफल

QUESTIONS



22

$$a \equiv b \pmod{m}$$

$$\frac{(a-b)}{m}$$

पूरा भाग जायेगा

$$27 \equiv 14 \pmod{13}$$

If $a \equiv b \pmod{m}$, it means:

यदि $a \equiv b \pmod{m}$, इसका अर्थ है:

A) a and b are equal

☒ B) (a - b) is divisible by m

C) $a \div b = m$

D) None

QUESTIONS



23

Find: $29 \bmod 6$

$29 \bmod 6$ ज्ञात करें।

A) 4

☒ B) 5

C) 3

D) 2

$$\frac{29}{6} \Rightarrow \begin{array}{l} \text{भाग} \\ 4 \\ \text{शेष} \\ 5 \end{array}$$

24

$$100 \equiv ? \pmod{9}$$

☒ A) 1

B) 2

C) 4

D) 7

$$100 \equiv 1 \pmod{9}$$

$$\frac{100-1}{9} = \frac{99}{9}$$

QUESTIONS



25

What is $(37 + 28) \bmod 10$?

$(37 + 28) \bmod 10$ का मान क्या है?

A) 3

☒ B) 5

C) 7

D) 0

$$(37 + 28) \bmod 10$$

$$65 \bmod 10$$

शेष 5

QUESTIONS

26

$$\overset{0}{2} \equiv 2 \pmod{7}$$

$$\overset{7}{9} \equiv 2 \pmod{7}$$

If $x \equiv 2 \pmod{7}$, then the least positive value of x can be:

यदि $x \equiv 2 \pmod{7}$, तो x का सबसे छोटा धनात्मक मान क्या हो सकता है?

~~A) 2~~

B) 5

C) 7

D) 9

QUESTIONS

27

Find $(50 \times 13) \bmod 7$

$(50 \times 13) \bmod 7$ ज्ञात करें।

A) 2

B) 3

C) 1

D) 5

~~(E) 6~~

(50×13)
 $\frac{650}{7} \Rightarrow 6$ शेष
 92 का

QUESTIONS

28

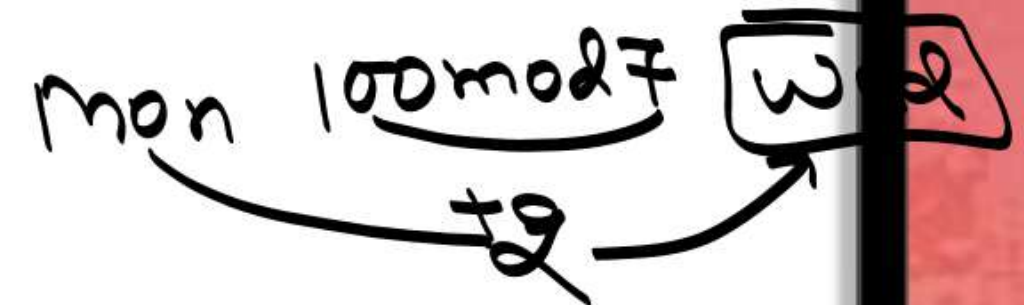
$$100 \bmod 7$$

शेष (2)

If today is Monday, what day will it be after 100 days? (mod 7)

यदि आज सोमवार है, तो 100 दिनों के बाद कौन-सा दिन होगा? (mod 7)

- ☒ A) Wednesday
- B) Thursday
- C) Friday
- D) Saturday



QUESTIONS



29

$$2^{10} \bmod 11 = ?$$

~~A) 1~~

B) 2

C) 10

D) 0

$$2^{10} \bmod 11$$

$$1024 \bmod 11$$

$$\frac{1024}{11} \Rightarrow 93 \text{ र १०} + \text{शेष } १$$

30

Revise

Which of the following is true?

निम्नलिखित में से कौन-सा सत्य है?

☒ A) $27 \equiv 5 \pmod{11}$

☐ B) $27 \equiv 4 \pmod{11}$

☐ C) $27 \equiv 6 \pmod{11}$

☐ D) $27 \equiv 7 \pmod{11}$