

ONESHOT 🔥

ARITHMETIC EXPRESSION

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CLASS 7TH MATHS



AAJ HUM PADHENGGE

- *All Topics In One Shot.*





SIMPLE EXPRESSIONS

Mathematical phrases like

$13 + 2 =$ 13 plus 2' or 'the sum of 13 and 2

$20 - 4 =$

$12 \times 5 =$

and $18 \div 3 =$

Such phrases are called **ARITHMETIC EXPRESSION**



SIMPLE EXPRESSIONS



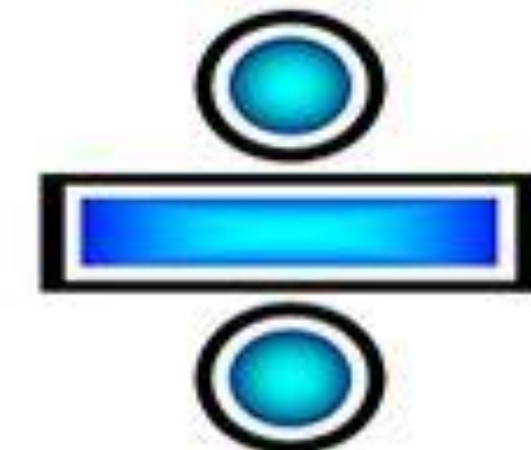
Add
Sum
Total
All together
Plus
In all



Multiply
Product
Times
Twice
Total
Multiplied by



Subtract
Remain
Difference
Less than
Fewer
How many more
Minus



Divide
Quotient
Goes into
Split Equally
Each

Mallika spends ₹25 every day for lunch at school. Write the expression for the total amount she spends on lunch in a week from Monday to Friday.



COMPARING EXPRESSIONS



Which is greater? $1023 + 125$ or $1022 + 128$?

Which is greater? $113 - 25$ or $112 - 24$?



COMPARING EXPRESSIONS

Use ' $>$ ' or ' $<$ ' or ' $=$ ' in each of the following expressions to compare them. Can you do it without complicated calculations? Explain your thinking in each case.

(a) $245 + 289 \square 246 + 285$

(b) $273 - 145 \square 272 - 144$

(c) $364 + 587 \square 363 + 589$



USE OF BRACKETS

Mallesh brought 30 marbles to the playground. Arun brought 5 bags of marbles with 4 marbles in each bag. How many marbles did Mallesh and Arun bring to the playground?



USE OF BRACKETS

Irfan bought a pack of biscuits for ₹15 and a packet of toor dal for ₹56. He gave the shopkeeper ₹100. Write an expression that can help us calculate the change Irfan will get back from the shopkeeper.



TERMS IN EXPRESSION

Terms are the parts of an expression separated by a '+' sign.

$$12 + 7 =$$

$$83 - 14 =$$

$$6 \times 5 + 3 =$$

$$2 - 10 + 4 \times 6 =$$



TERMS IN EXPRESSION

Expression	Expression as the sum of its terms	Terms
$13 - 2 + 6$		
$5 + 6 \times 3$		
$4 + 15 - 9$		
$23 - 2 \times 4 + 16$		
$28 + 19 - 8$		



SWAPPING



Example: Madhu is flying a drone from a terrace. The drone goes 6 m up and then 4 m down. Write an expression to show how high the final position of the drone is from the terrace.



SWAPPING



Thus, in an expression having two terms, swapping them does not change the value.

$$\text{Term 1} + \text{Term 2} = \text{Term 2} + \text{Term 1}$$

This Property of Swapping of a number is called as a **COMMUTATIVE PROPERTY**



GROUPING

Now consider an expression having three terms: $(-7) + 10 + (-11)$. Let us add these terms in the following two different orders:



GROUPING

Thus, grouping the terms of an expression in either of the following ways gives the same value.

$$\text{Term 1} + \text{Term 2} + \text{Term 3} = \text{Term 1} + \text{Term 2} + \text{Term 3}$$

This Property of Grouping of a number is called as a **ASSOCIATIVE PROPERTY**



Swapping the Order of Things in Everyday Life





Swapping the Order of Things in Everyday Life

Example:

Amu, Charan, Madhu, and John went to a hotel and ordered four dosas. Each dosa cost ₹23, and they wish to thank the waiter by tipping ₹5. Write an expression describing the total cost.



Swapping the Order of Things in Everyday Life

Example:

Raghu bought **100 kg** of rice from the wholesale market and packed them into **2 kg** packets. He already had four **2 kg** packets. Write an expression for the number of **2 kg** packets of rice he has now and identify the terms.



FIGURE IT OUT



Find the values of the following expressions by writing the terms in each case.

(a) $39 - 2 \times 6 + 11$

(b) $48 - 10 \times 2 + 16 \div 2$

(e) $6 \times 3 - 4 \times 8 \times 5$



FIGURE IT OUT



A metro train ticket between two stations is ₹ 40 for an adult and ₹ 20 for a child. What is the total cost of tickets:

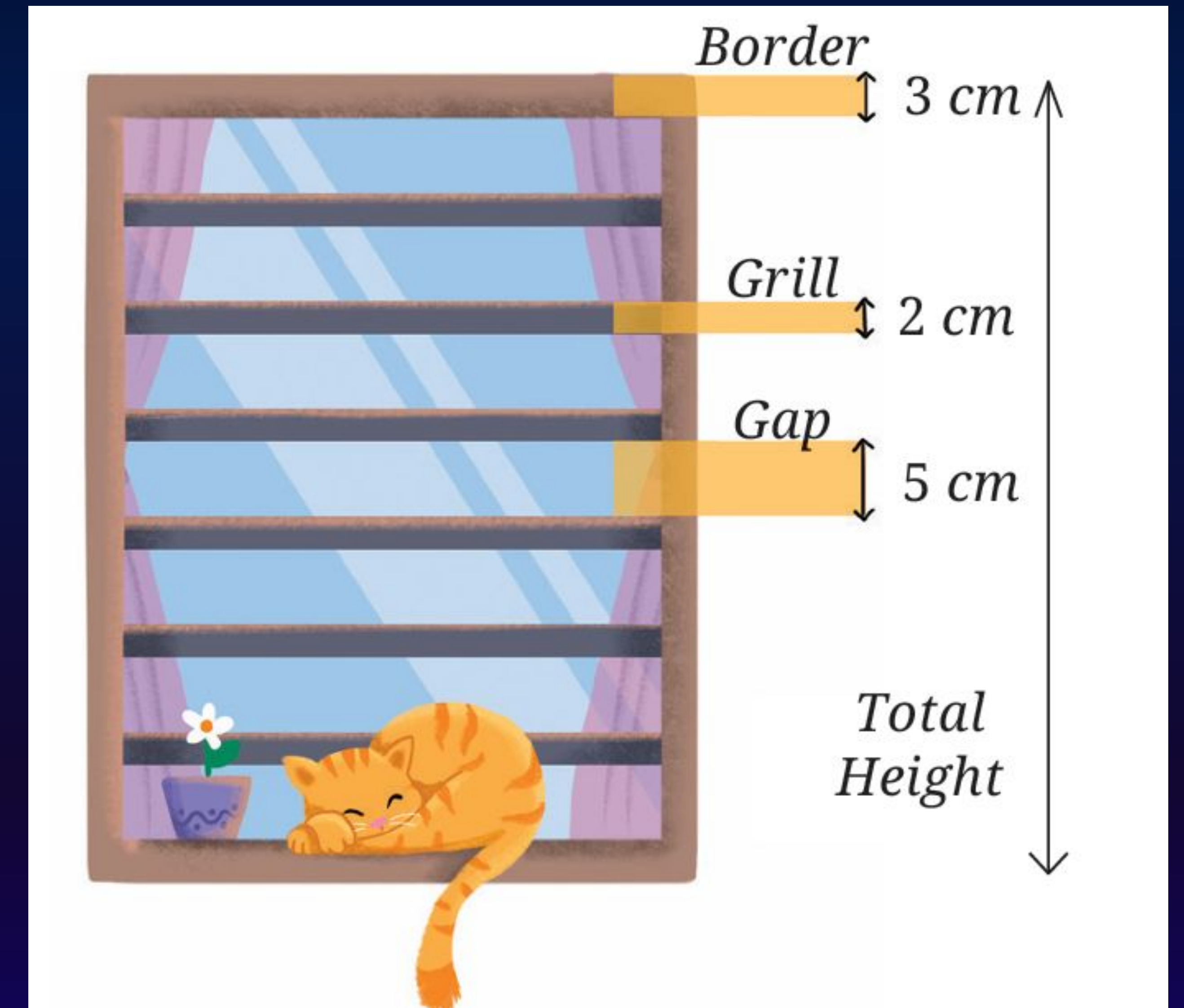
(i) for four adults and three children?

(ii) for two groups having three adults each?



FIGURE IT OUT

Find the total height of the window by writing an expression describing the relationship among the measurements shown in the picture.





REMOVING BRACKETS

Let us find the value of this expression,

$$200 - (40 + 3).$$

Consider the expression $500 - (250 - 100)$. Is it possible to write this expression without the brackets?



REMOVING BRACKETS



Hira has a rare coin collection. She has 28 coins in one bag and 35 coins in another. She gifts her friend 10 coins from the second bag. Write an expression for the number of coins left with Hira.



Important hai ye.....

- When the brackets preceded by a negative sign are removed, the signs of the terms inside the brackets change.
- When the brackets are **NOT** preceded by a negative sign, the terms within them do not change their signs upon removing the brackets.

Fill in the blanks with numbers, and boxes with operation signs such that the expressions on both sides are equal.

$$(a) \quad 24 + (6 - 4) = 24 + 6 \quad \underline{\hspace{1cm}}$$

$$(b) \quad 38 + (\underline{\hspace{1cm}} \underline{\hspace{1cm}}) = 38 + 9 - 4$$

$$(c) \quad 27 - (8 + 3) = 27 \underline{\hspace{0.5cm}} 8 \underline{\hspace{0.5cm}} 3$$

$$(d) \quad 27 - (\underline{\hspace{1cm}} \underline{\hspace{1cm}}) = 27 - 8 + 3$$

Find the values of the following expressions. For each pair, first try to guess whether they have the same value. When are the two expressions equal?

(a) $(6 + 10) - 2$ and $6 + (10 - 2)$

(b) $16 - (8 - 3)$ and $(16 - 8) - 3$

In each of the sets of expressions below, identify those that have the same value. Do not evaluate them, but rather use your understanding of terms.

$87 + 46 - 109$, $87 - 46 + 109$, $87 - (46 + 109)$, $(87 - 46) + 109$

Add brackets at appropriate places in the expressions such that they lead to the values indicated.

$$(a) 34 - 9 + 12 = 13$$

$$(b) 56 - 14 - 8 = 34$$

$$(c) -22 - 12 + 10 + 22 = -22$$

Consider the expressions: $73 - 14 + 1$. For each of these expressions, identify the expressions from the following collection that are equal to it.

A $73 - (14 + 1)$

B $73 - (14 - 1)$

C $73 + (-14 + 1)$

D $73 + (-14 - 1)$

Consider the expressions: $73 - 14 - 1$. For each of these expressions, identify the expressions from the following collection that are equal to it.

A $73 - (14 + 1)$

B $73 - (14 - 1)$

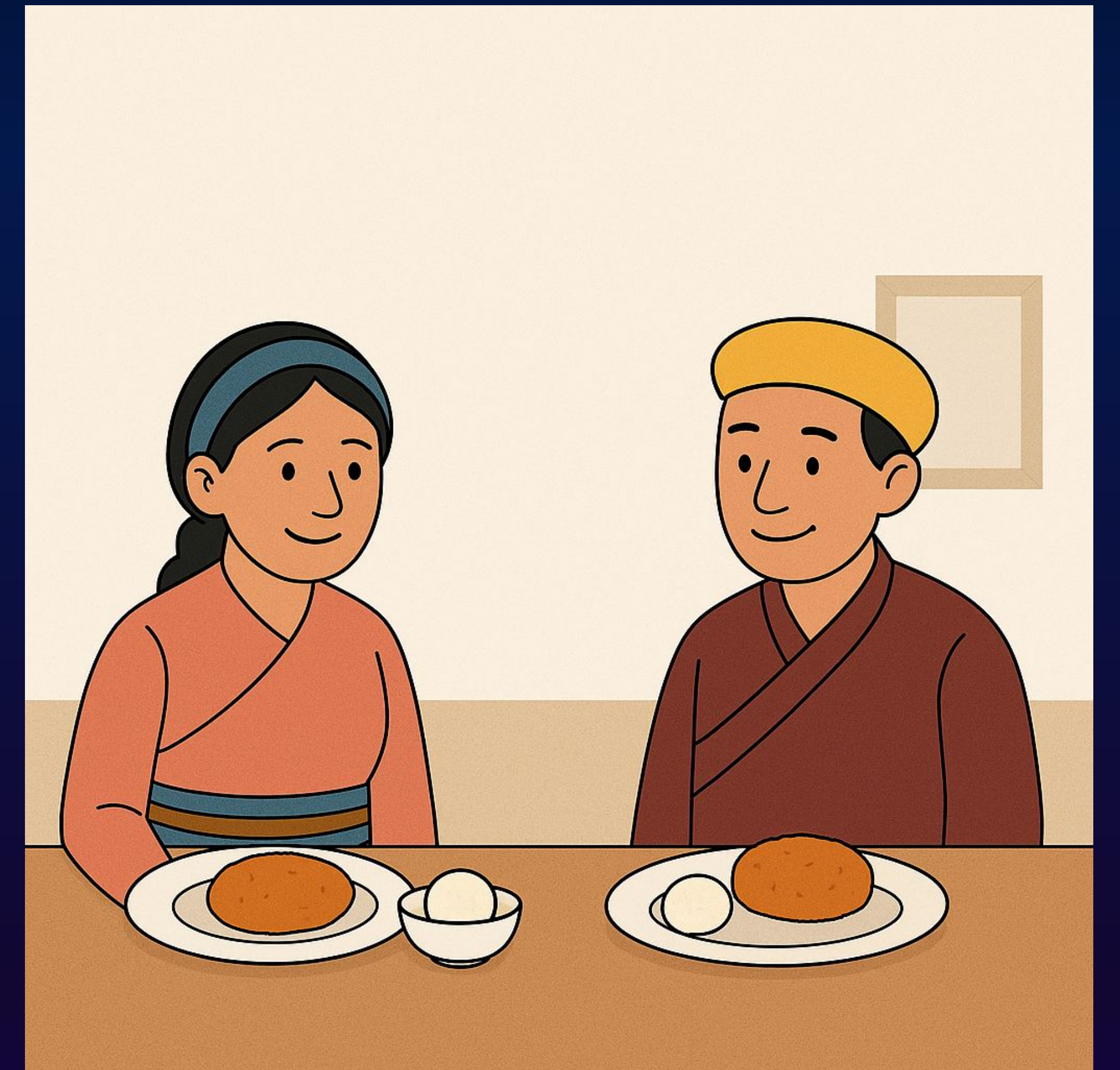
C $73 + (-14 + 1)$

D $73 + (-14 - 1)$



REMOVING BRACKETS II

Lhamo and Norbu went to a hotel. Each of them ordered a vegetable cutlet and a rasgulla. A vegetable cutlet costs ₹43 and a rasgulla costs ₹24. Write an expression for the amount they will have to pay



If another friend, Sangmu, joins them and orders the same items, what will be the expression for the total amount to be paid?

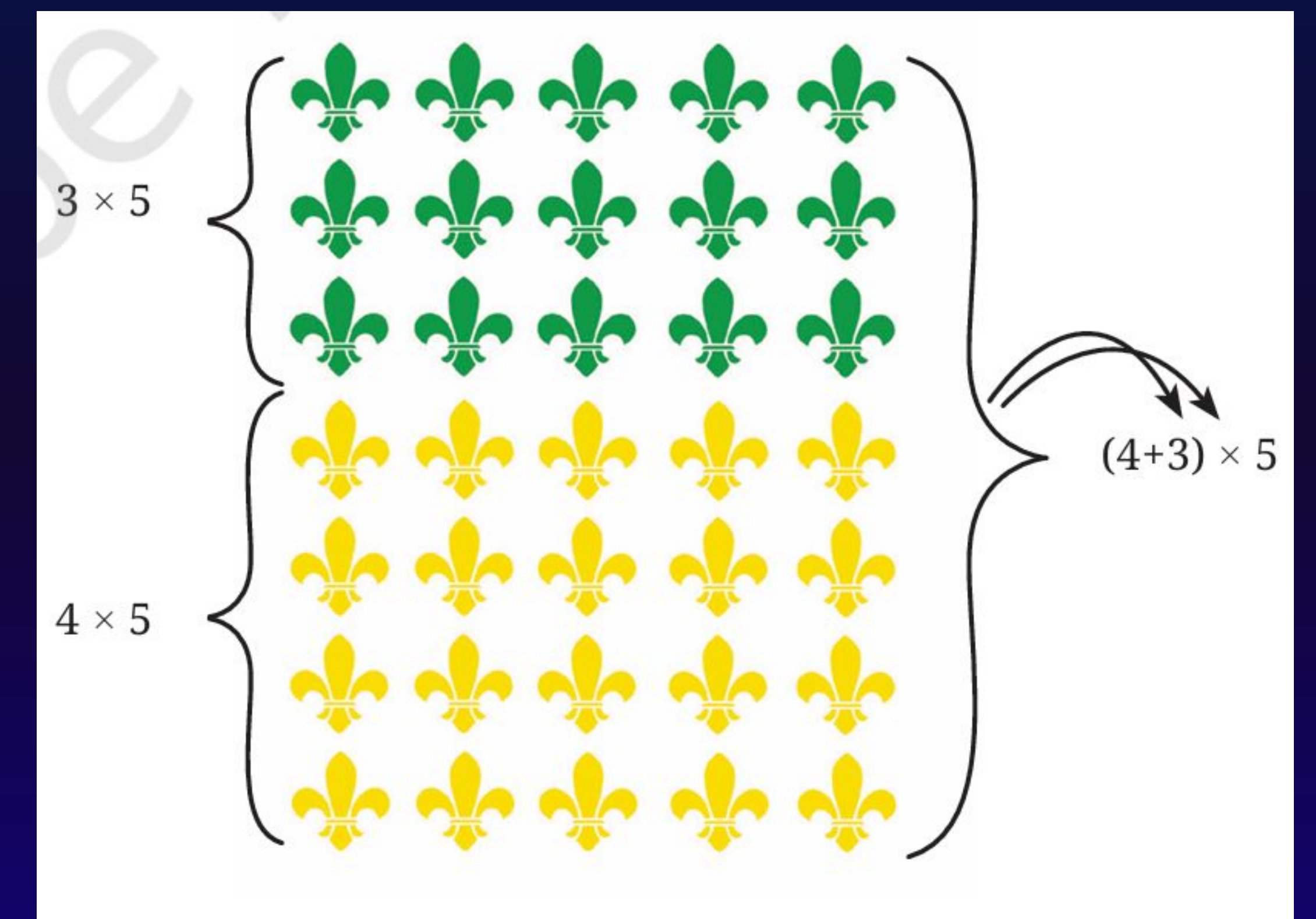
- A** $3 \times 43 + 24$
- B** $3 \times [43 + 24]$
- C** $[3 \times 43] + 24$
- D** None





REMOVING BRACKETS II

In the Republic Day parade, there are boy scouts and girl guides marching together. The scouts march in 4 rows with 5 scouts in each row. The guides march in 3 rows with 5 guides in each row (see the figure below). How many scouts and guides are marching in this parade?





REMOVING BRACKETS II

Consider $10 \times 98 + 3 \times 98$. This means taking the sum of 10 times 98 and 3 times 98.

$$\underbrace{98 + 98 + 98 + 98 + 98 + 98 + 98 + 98 + 98 + 98}_{10 \text{ times}} + \underbrace{98 + 98 + 98}_{3 \text{ times}}$$



REMOVING BRACKETS II

Let us consider the expression $14 \times 10 - 6 \times 10$. This means subtracting 6 times 10 from 14 times 10.



Important hai ye.....

The multiple of a sum (difference) is the same as the sum (difference) of the multiples.

$$(\underline{\quad} + 6) \times 4 = 13 \times 4 + \underline{\quad}$$

$$(\underline{\quad} + \underline{\quad}) \times \underline{\quad} = 2 \times 4 + 3 \times 4$$

$$(15 - \underline{\quad}) \times 7 = \underline{\quad} - 6 \times 7$$

Given $53 \times 18 = 954$. Find out 63×18 .

Find an effective way of evaluating 97×25 .

Use this method to find the following products:

(a) 95×8

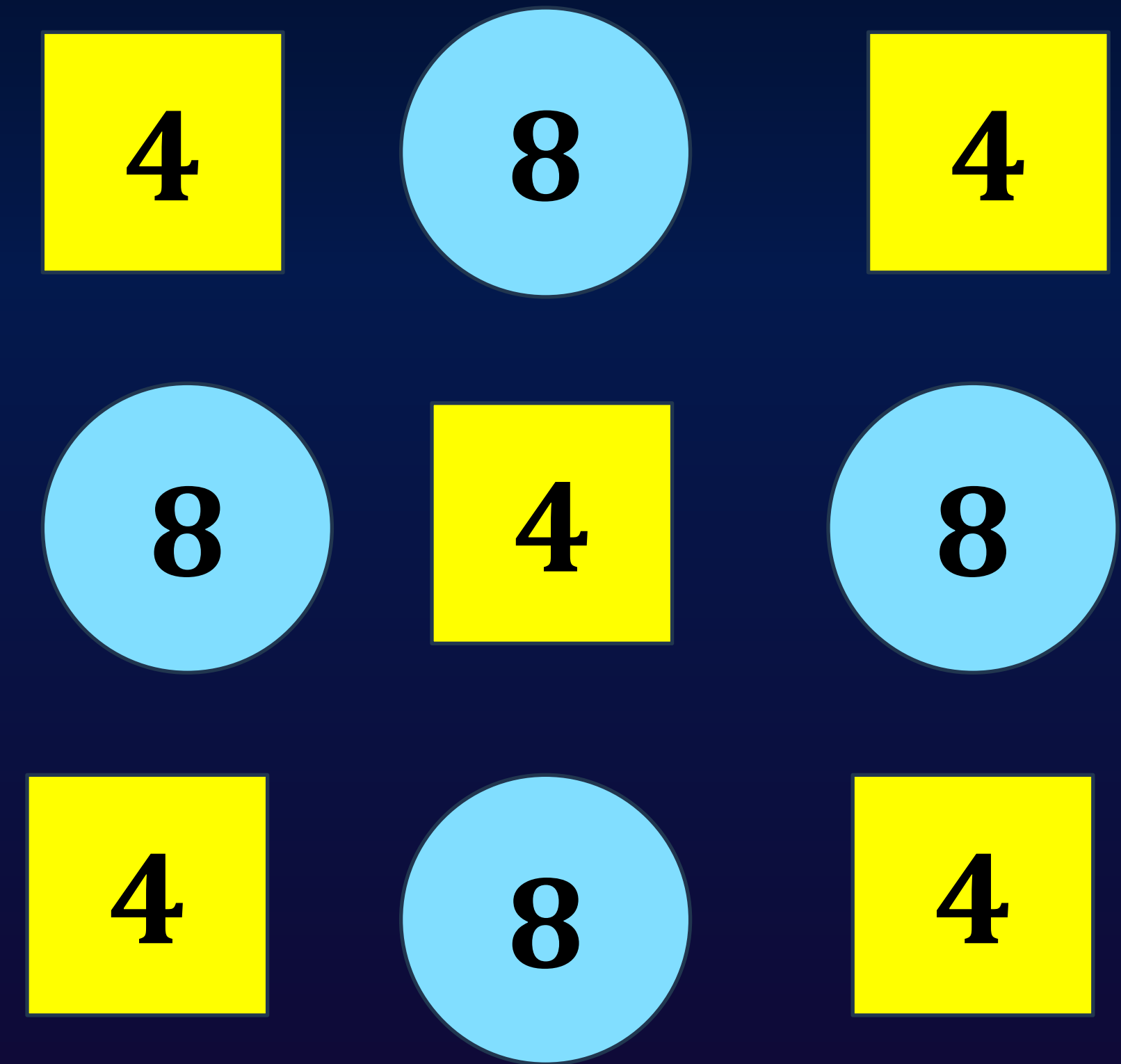
(b) 104×15

In the boxes below, fill '<', '>' or '=' after analysing the expressions on the LHS and RHS. Use reasoning and understanding of terms and brackets to figure this out and not by evaluating the expressions.

[a] $23 \times (17 - 9)$ $23 \times 17 + 23 \times 9$

[b] $(34 - 28) \times 42$ $34 \times 42 - 28 \times 42$

Find out the sum of the numbers given in each picture below in at least two different ways. Describe how you solved it through expressions.



The district market in Begur operates on all seven days of a week. Rahim supplies 9 kg of mangoes each day from his orchard and Shyam supplies 11 kg of mangoes each day from his orchard to this market. Find the amount of mangoes supplied by them in a week to the local district market.

Binu earns ₹20,000 per month. She spends ₹5,000 on rent, ₹5,000 on food, and ₹2,000 on other expenses every month. What is the amount Binu will save by the end of a year?

During the daytime a snail climbs 3 cm up a post, and during the night while asleep, accidentally slips down by 2 cm. The post is 10 cm high, and a delicious treat is on its top. In how many days will the snail get the treat?

Melvin reads a two-page story every day except on Tuesdays and Saturdays. How many stories would he complete reading in 8 weeks? Which of the expressions below describes this scenario?

$$83 - 37 - 12 =$$

A $-12 - 37 + 83$

B $83 - (37 + 12)$

C $-37 + 83 - 12$

D All of these

**CHALO AB REVISE KAR
LENA ACHE SE**

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