ONESHOT

Large Number Around US

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CLASS 7TH MATHS

AAJ HUM PADHENGE

A LAKH VARIETIES .....

ThTe largest 3-digit number is	999
The smallest 4-digit number is	1000
The largest 4-digit number is	9999
The smallest 5-digit number is	10,000
The largest 5-digit number is	99,999
The smallest 6-digit number is	1,00,000

+1

+1

+1

1,00,000 *is* read as "One *Lakh*"

1,00,000

⇓

5 zeroes

⇓

6 digits.

If Duggu tried 1 new variety each day, would we even come close to tasting all the varieties(one lakh Rice varieties) in a lifetime of 100 years?

1 Day = 1 New

1 Year = 365 Days = 365 New

100 years = 100 x 365

= 36,500 New

If Duggu tried **2** new varieties each day, would We even come close to tasting all the varieties(one lakh Rice varieties) in a lifetime of 100 years?

1 Day = 2 New

1 Year = 365 Day = 365 × 2

= 730 New.

100 Year = 100 × 730

= 73,000 New

If Duggu tried 3 new varieties each day, would We even come close to tasting all the varieties(one lakh Rice varieties) in a lifetime of 100 years?

1 Day = 3 New

1 year = 365 Days = 365×3

= 1095 New

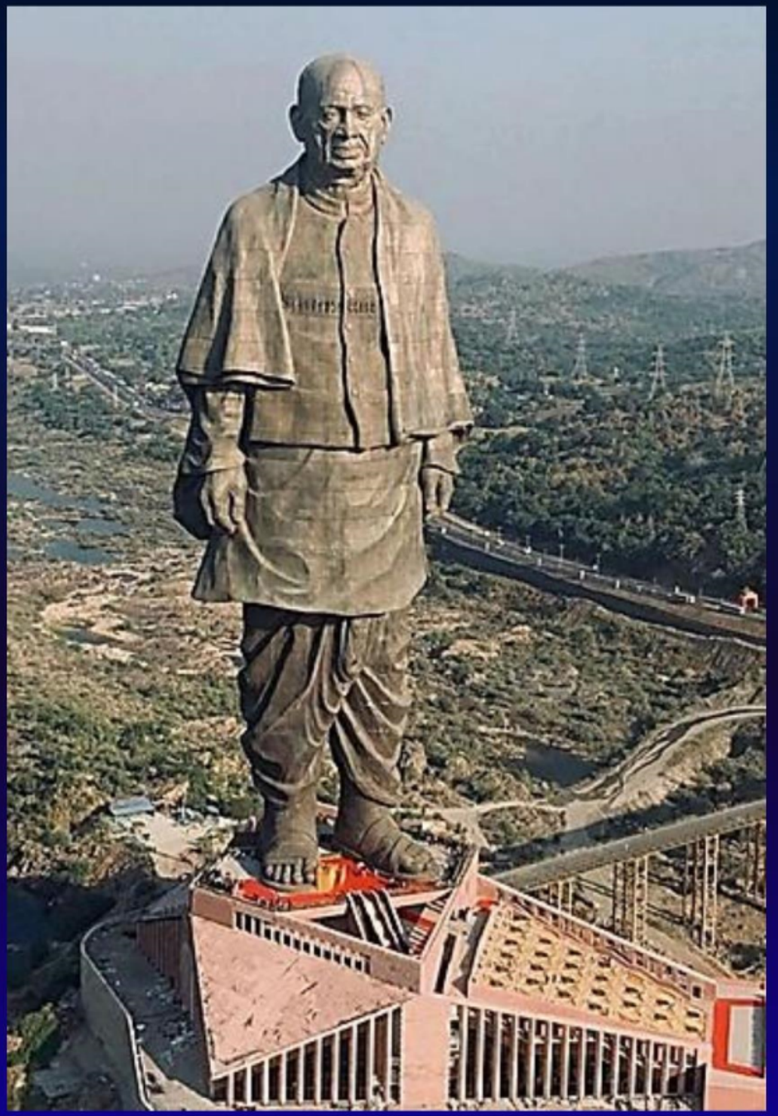
100 Year = 1095×100

= 1,09,500

Getting a Feel of Large Numbers

The world's tallest statue is the 'Statue of Unity' in Gujarat depicting Sardar Vallabhbhai Patel.

Its height is about 180 metres.



Getting a Feel of Large Numbers

Kunchikal waterfall in Karnataka is said to drop from a height of about 450 metres.

Getting a Feel of Large Numbers

Somu is 1 metre tall. If each floor is about four times his height, what is the approximate height of the building?

Somu height = 1 m

each floor = 1 m x 4

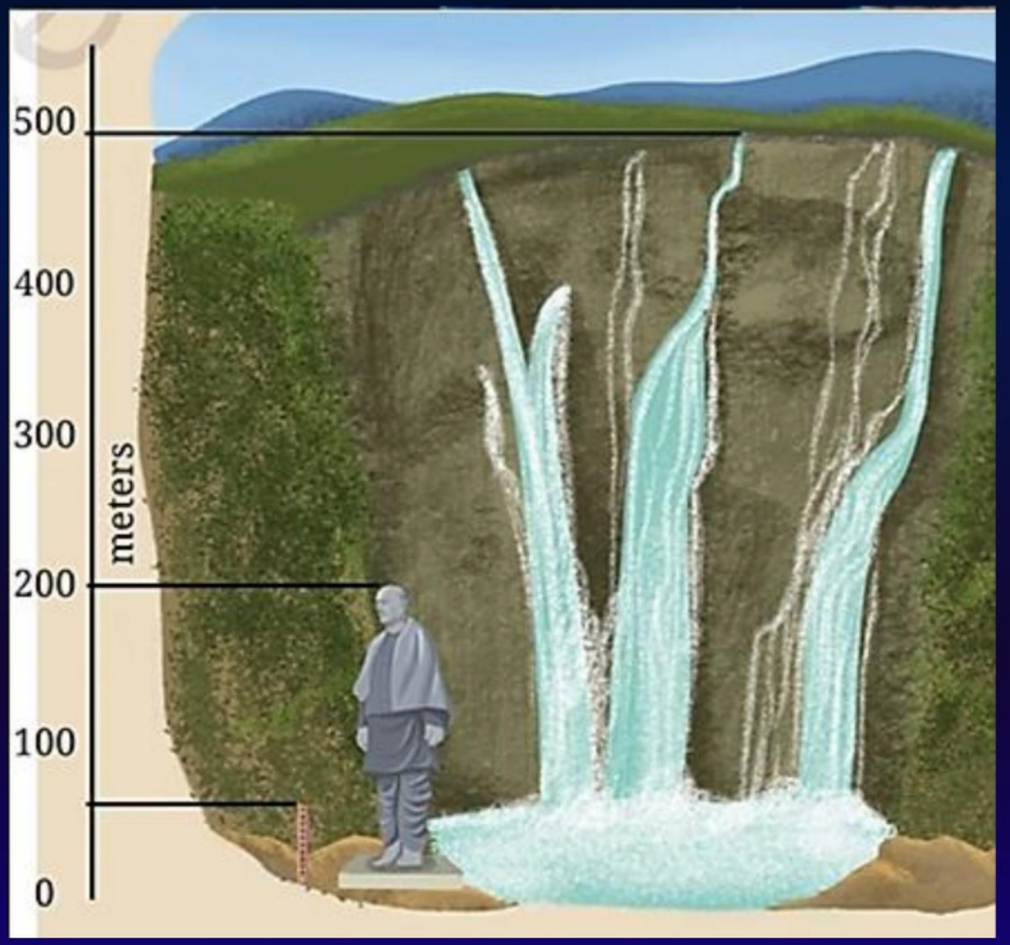
= 4 m

1 floor = 4 m

11 floor = 4 x 11

= 44 m.

Getting a Feel of Large Numbers



Getting a Feel of Large Numbers

- Which is taller - The Statue of Unity or this building? How much taller? m.

$180 - 44$

$= 136\ m.$

- How much taller is the Kunchikalwaterfall than Somu's?. . . . m.

$450 - 1 = 449\ m$

1 floor = 4 m

$x = 450\ m.$

$\frac{450 \times 1}{4} = \frac{4x}{4}$

$x = \frac{450}{4}$

$= 112.5$ floor

- How niany floors should Somu'sbuilding have to be as high as thewaterfall? _____ .

112 - 113

A LAND OF TENS

The Thoughtful Thousands only has a +1000 button. How many times should it be pressed to show:

(a) 10,000 ? 10 times 10 × 1000 = 10,000

(b) Fifty-three thousand? 53 Times 53 × 1000 = 53,000

53,000

(c) 90,000? 90 times 90 × 1000 = 90,000

1,00,000

(d) One Lakh? Halwa Question-1.

A LAND OF TENS

The Tedious Tens only has a +10 button. How many times should it be pressed to show:

(a) Five hundred? 50 times $50 \times 10 = 500$

(b) 780? 78 times $78 \times 10 = 780$

(c) One Lakh? 10,000 $10,000 \times 10 = 1,00,000$

(d) 4350 ? 435 times $435 \times 10 = 4350$.

A LAND OF TENS

The Handy Hundreds only has a +100 button. How many times should it be pressed to show:

(a) Four hundred? 4 times $4 \times 100 = 400$

(b) 3,700? 37 $37 \times 100 = 3700$

(c) 1,00,000? Halwa Question - 2

A LAND OF TENS

(d) Handy Hundreds says, "There are some numbers which Tedious Tens and Thoughtful Thousands can't show but I can." Is this statement true? Think and explore.

False

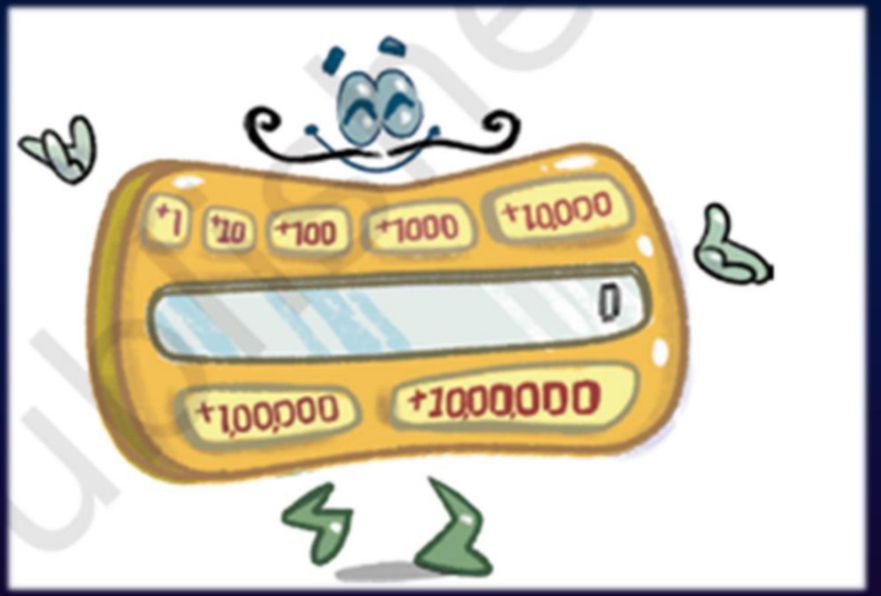
Thoughtful Thousand ✗

100
200
300
400
500
600
700
800
900
1000

Tedious Ten ✓✓

A LAND OF TENS

For each number given below, write expressions for at least two different ways to obtain the number through button clicks. Think like Chitti and be creative.



(a) 8300

$8 \times 1000 + 3 \times 100$

83×100

(b) 40629 $\Rightarrow 4 \times 10{,}000 + 6 \times 100 + 2 \times 10 + 9 \times 1$

$= 40 \times 1000 + 6 \times 100 + 2 \times 10 + 9 \times 1$

A LAND OF TENS

Creative Chitti has some questions for you-

(a) You have to make exactly 30 button presses. What is the largest 3-digit number you can make? What is the smallest 3-digit number you can make?

100 × 10 = 1000 ✗

100 × 9 = 900

21 → click left → 980

10 × 8 = 80

13 → click left

1 × 13 = 13 → 993

Largest 3 Digit No

100

10 × 9 = 90

21 → clicks → 111

1 × 21 = 21

10 × 8 = 80

22 → click left → 102 → Smallest 3 digit

1 × 22 = 22

A LAND OF TENS

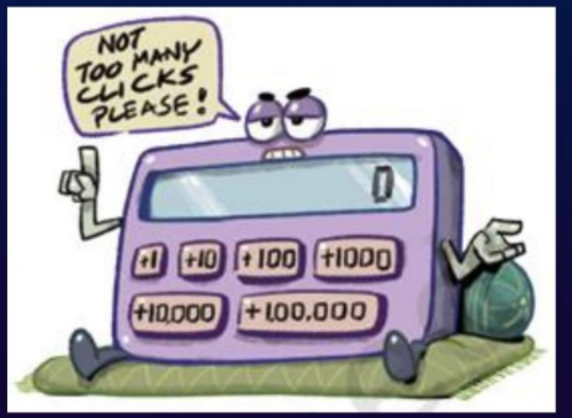
Systematic Sippy has some questions for you-

Expanded form

How can we get the numbers using as few button clicks as possible?

(a) 5072 $\Rightarrow 1000\times5 + 10\times7 + 1\times2$

14 clicks



(b) 8300 $\Rightarrow 8\times1000 + 3\times100$ $\Rightarrow$ 11 Clicks

OF CRORES AND CRORES

Indian System		American System	
1,000	One thousand	1,000	One thousand
10,000	Ten thousand	10,000	Ten thousand
1,00,000	One lakh	100,000	Hundred thousand
10,00,000	Ten lakhs	1,000,000	One million
1,00,00,000	One crore	10,000,000	Ten million
10,00,00,000	Ten crores	100,000,000	Hundred million
1,00,00,00,000	One arab or One hundred crores	1,000,000,000	One billion

1 Million = 10 Lakh

10 million = 10 × 10 Lakh
= 100 Lakh ⇒ 1 Crore
1,00,00,000

1 Billion = 1 Arab

USE OF COMMA'S

Indian System Of Numeration

73,45,87,64,879

1,00,00,000

International System Of Numeration

1,000,000,000

73,478,987.

NUMBER OF ZEROES

NUMBERS	NUMBERS OF ZEROES
1 ARAB / 1 Billion	9
1 CRORE 10M.	7
10 LAKHS 1 Million	6
1 LAKH	5
10 THOUSANDS	4
1 THOUSAND	3

Read the following numbers in Indian place value notation and write their number names in both the Indian and American systems:

(a) 40,50,678

Forty Lakh fifty Thousand Six hundred and Seventy Eight.

(b) 20,22,002

Two crore Twenty Two Thousand. and two.

(c) 345,00,543 34 Crores 50 Lakh five Hundred & forty three.

Read the following numbers in Indian place value notation and write their number names in both the Indian and American systems:

(a) 4050678

4 Million 50 Hundred Thousand 678.

(b) 20022002

20 Million 22 Hundred Thousand two

(c) 345000543 H·W → III

Write the following numbers in Indian place value notation:

A One crore one lakh one thousand ten

1, 0 1, 0 1, 0 1, 0 1 0 = 1,01,01,010

B One billion one million one thousand one

1, 0 0 1, 0 0 1, 0 0 1 = 1,001,001,001

C Ten crore twenty lakh thirty thousand forty

10, 2 0, 3 0, 0 4 0

D Nine billion eighty million seven hundred thousand six hundred

Halwa. Question 4.

Compare and write '<', '>' or '=':

A. 30 thousand _____ 3 lakhs

B. 500 lakhs _____ 5 million

C. 800 thousand _____ 8 million

D. 640 crore _____ 60 billion

EXACT AND APPROXIMATE VALUE

EXACT AND APPROXIMATE VALUE

EXACT AND APPROXIMATE VALUE

Think and share situations where it is appropriate to (a) round up, (b) round down, (c) either rounding up or rounding down is okay and (d) when exact numbers are needed.

EXACT AND APPROXIMATE VALUE

(a) Round Up:

Buying food for a group or occasion.

Buying materials so you don't run short.

(b) Round Down:

The shopkeeper is saying lower prices to attract buyers.

Estimating fuel left to drive more carefully.

Estimating remaining time to a meeting (e.g., saying 10 minutes left when it's 12 minutes) to create urgency and avoid being late.

EXACT AND APPROXIMATE VALUE

(c) Either is Okay:

Casual talks.
Distance estimation between places.
Telling academic results.

(d) Exact Numbers Needed:

- Handling money (bank balance, salary, tax).
- Doing science experiments or engineering work.
- Dialling emergency numbers (like 100 for the police)

EXACT AND APPROXIMATE VALUE

With large numbers it is useful to know the nearest thousand, lakh or crore. For example, the nearest neighbours of the number 6, 72, 85, 183 are shown in the table below.

Nearest thousand	6,72,85,000
Nearest ten thousand	6,72,90,000
Nearest lakh	6,73,00,000
Nearest ten lakh	6,70,00,000
Nearest crore	7,00,00,000

PATTERNS IN PRODUCT

MULTIPLICATION WITH 5

PATTERNS IN PRODUCT

MULTIPLICATION WITH 25

PATTERNS IN PRODUCT

Figure it Out

1. Find quick ways to calculate these products:
   (a) $2 \times 1768 \times 50$

   (b) 72×125

   (c) $125 \times 40 \times 8 \times 25$

PATTERNS IN PRODUCT

How Long is the Product?

In each of the following boxes, the multiplications produce interesting patterns. Evaluate them to find the pattern. Extend the multiplications based on the observed pattern.

$11 \times 11 = 121$

$111 \times 111 = 12321$

$1111 \times 1111 = 1234321$

$11111 \times 11111 = 123454321$

$111111 \times 111111 = 12345654321$

$1111111 \times 1111111 = 1234567654321$

PATTERNS IN PRODUCT

How Long is the Product?

In each of the following boxes, the multiplications produce interesting patterns. Evaluate them to find the pattern. Extend the multiplications based on the observed pattern.

$66 \times 61 = 4026$

$666 \times 661 = 440226$

$6666 \times 6661 = 44402226$

$66666 \times 66661 = 4444022226$

$666666 \times 666661 = 444440222226$

PATTERNS IN PRODUCT

How Long is the Product?

In each of the following boxes, the multiplications produce interesting patterns. Evaluate them to find the pattern. Extend the multiplications based on the observed pattern.

$3 \times 5 = 15$

$33 \times 35 = 1155$

$333 \times 335 = 111555$

$3333 \times 3335 = 11115555$

$333333 \times 333335 = 111111555555$

$33333 \times 333331 = 1111155555$

PATTERNS IN PRODUCT

How Long is the Product?

In each of the following boxes, the multiplications produce interesting patterns. Evaluate them to find the pattern. Extend the multiplications based on the observed pattern.

$101 \times 101 = 10201$
$102 \times 102 = 10404$
$103 \times 103 = 10609$

$101 \times 101 = 10201$ (25, 1)
$104 \times 104 = 10816$
$108 \times 108 = 11664$

$109 \times 109 = 11881$
$107 \times 107 = 11449$

106×106 : Halwa Que - 5

DID YOU EVER WONDERED?

Estu is amused by all these interesting facts about large numbers. While thinking about these, he came up with an unusual question, "Could the entire population of Mumbai fit into 1 lakh buses?" [Population of Mumbai is 1 crore 24 lakh]

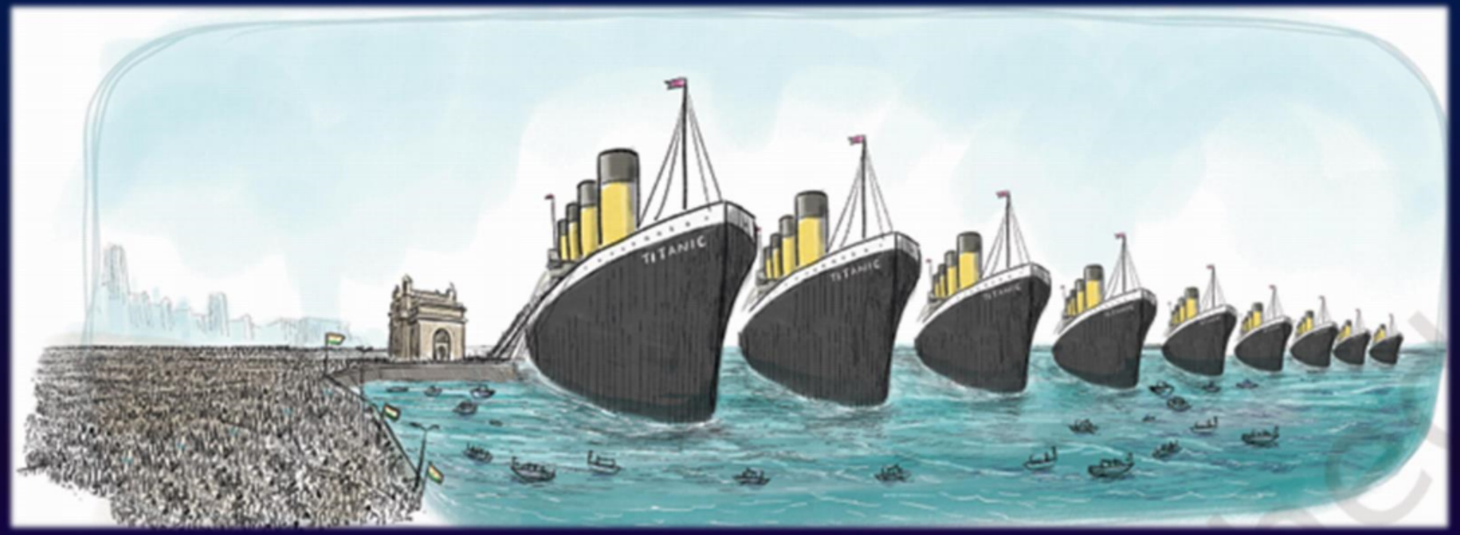
1 Bus = 50 people.

1 lakh Bus = 50 x 1,00,000

= 50 lakh

DID YOU EVER WONDERED?

The RMS Titanic ship carried about 2500 passengers. Can the population of Mumbai fit into 5000 such ships?



1 Ship = 2500 P

5000 ship = 5000 × 2500

= 1,25,0 0,000

1 crore 25 Lakh

1,24 lakh

DID YOU EVER WONDERED?

Roxie wondered, “If I could travel 100 kilometers every day, could I reach the Moon in 10 years?” (The distance between the Earth and the Moon is 3,84,400 km.)

How far would she have travelled in a year?

How far would she have travelled in 10 years?

Halwa Question - 6.

How many lakhs make a billion?

A 1000

B 100

C 10,000

D 10

$x \times 1,00,000 = 1,000,000,000$

5 9

42 zeros

10,000

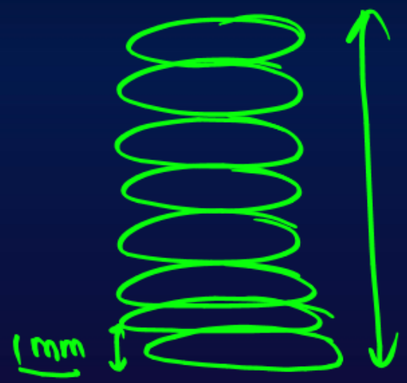
Find out how many coins should be stacked to match the height of the Statue of Unity. Assume each coin is 1 mm thick. [Height of statue of unity is 180m=1,80,000mm]

A 1800

B 18,000

C 1,80,000

D 18,00,000



1,80,000 mm

CHALO AB REVISE KAR LENA ACHE SE