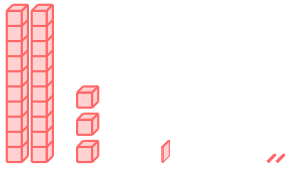


DECIMAL NUMBERS

A DEFINITION

A.1 IDENTIFYING PLACE VALUES

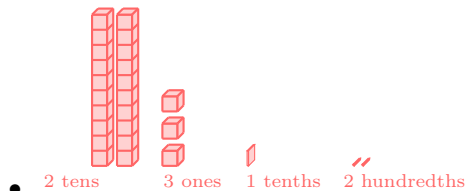
Ex 1:



The number of cubes is:

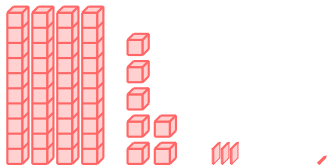
Tens	Ones	.	Tenths	Hundredths
2	3	.	1	2

Answer:



- | Tens | Ones | . | Tenths | Hundredths |
|------|------|---|--------|------------|
| 2 | 3 | . | 1 | 2 |

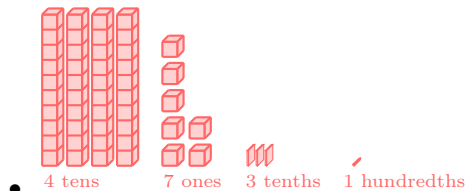
Ex 2:



The number of cubes is

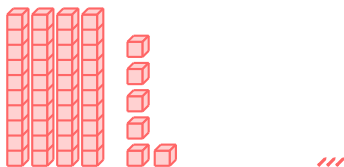
Tens	Ones	.	Tenths	Hundredths
4	7	.	3	1

Answer:



- | Tens | Ones | . | Tenth | Hundredths |
|------|------|---|-------|------------|
| 4 | 7 | . | 3 | 1 |

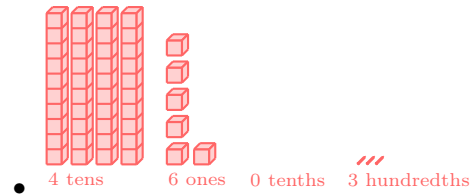
Ex 3:



The number of cubes is

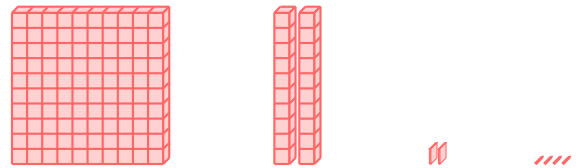
Tens	Ones	.	Tenths	Hundredths
4	6	.	0	3

Answer:



- | Tens | Ones | . | Tenth | Hundredths |
|------|------|---|-------|------------|
| 4 | 6 | . | 0 | 3 |

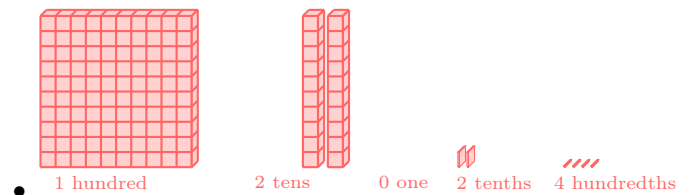
Ex 4:



The number of cubes is

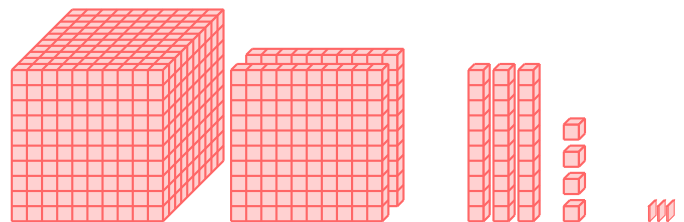
Hundreds	Tens	Ones	.	Tenths	Hundredths
1	2	0	.	2	4

Answer:



- | Hundreds | Tens | Ones | . | Tenths | Hundredths |
|----------|------|------|---|--------|------------|
| 1 | 2 | 0 | . | 2 | 4 |

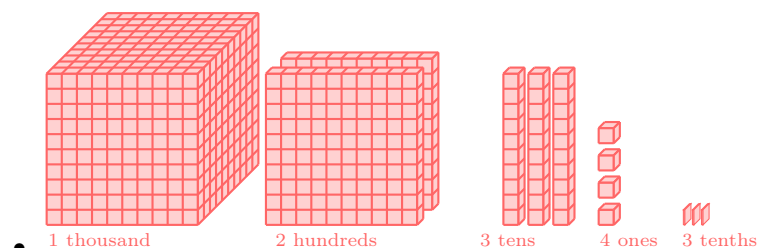
Ex 5:



The number of cubes is

Thousands	Hundreds	Tens	Ones	.	Tenths
1	2	3	4	.	3

Answer:



- | Thousands | Hundreds | Tens | Ones | . | Tenths |
|-----------|----------|------|------|---|--------|
| 1 | 2 | 3 | 4 | . | 3 |

A.2 WRITING DECIMAL NUMBERS

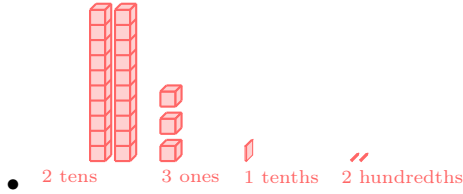
Ex 6:

Tens	Ones	.	Tenths	Hundredths
2	3	.	1	2

The decimal number is 23.12.

Answer:

- The decimal number is 23.12.



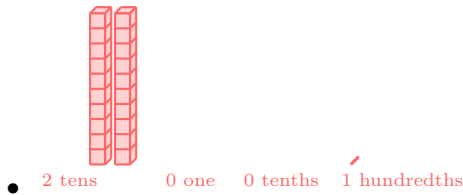
Ex 7:

Tens	Ones	.	Tenths	Hundredths
2	0	.	0	1

The decimal number is 20.01.

Answer:

- The decimal number is 20.01.



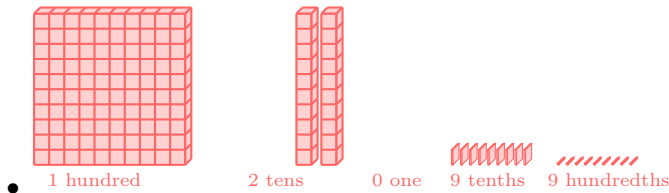
Ex 8:

Hundreds	Tens	Ones	.	Tenths	Hundredths
1	2	0	.	9	9

The decimal number is 120.99.

Answer:

- The decimal number is 120.99.



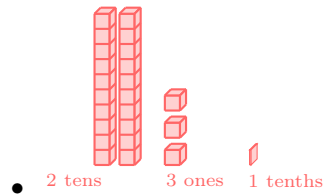
Ex 9:

Tens	Ones	.	Tenths	Hundredths
2	3	.	1	0

The decimal number is 23.1.

Answer:

- The decimal number is $23.10 = 23.1$.



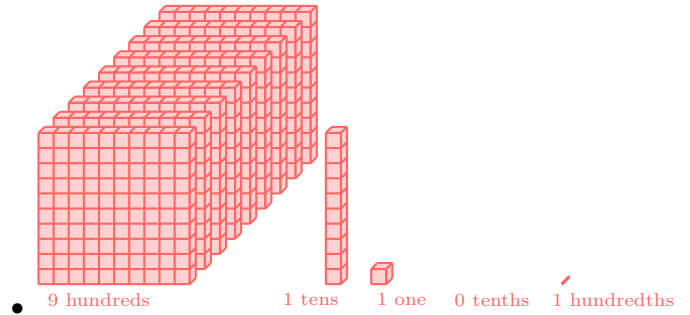
Ex 10:

Hundreds	Tens	Ones	.	Tenths	Hundredths
9	1	1	.	0	1

The decimal number is 911.01.

Answer:

- The decimal number is 911.01.



A.3 FINDING THE DIGIT IN A PLACE VALUE

Ex 11: The digit in the hundredths place of 43.21 is 1.

Answer:

- 43.21 is

Tens	Ones	.	Tenths	Hundredths
4	3	.	2	1
- The digit in the hundredths place of 43.21 is 1.

Ex 12: The digit in the tens place of 900.01 is 0.

Answer:

- 900.01 is

Hundreds	Tens	Ones	.	Tenths	Hundredths
9	0	0	.	0	1
- The digit in the tens place of 900.01 is 0.

Ex 13: The digit in the tenths place of 10.04 is 0.

Answer:

- 10.04 is

Tens	Ones	.	Tenths	Hundredths
1	0	.	0	4
- The digit in the tenths place of 10.04 is 0.

Ex 14: The digit in the hundredths place of 0.89 is 9.

Answer:

- 0.89 is

Ones	.	Tenths	Hundredths
0	.	8	9
- The digit in the hundredths place of 0.89 is 9.

A.4 WRITING DECIMAL NUMBERS FROM FRACTIONS IN BASE 10

Ex 15: Write in decimal form:

$$\frac{3}{10} = \boxed{0.3}$$

Answer:

- $\frac{3}{10} = \begin{array}{c} \text{///} \\ 3 \text{ tenths} \end{array}$
- $\frac{3}{10} = 0.3$

Ex 16: Write in decimal form:

$$\frac{3}{100} = \boxed{0.03}$$

Answer:

- $\frac{3}{100} = \begin{array}{c} \text{///} \\ 3 \text{ hundredths} \end{array}$
- $\frac{3}{100} = 0.03$

Ex 17: Write in decimal form:

$$\frac{5}{100} = \boxed{0.05}$$

Answer:

- $\frac{5}{100} = \begin{array}{c} \text{////} \\ 5 \text{ hundredths} \end{array}$
- $\frac{5}{100} = 0.05$

Ex 18: Write in decimal form:

$$\frac{8}{10} = \boxed{0.8}$$

Answer:

- $\frac{8}{10} = \begin{array}{c} \text{////////} \\ 8 \text{ tenths} \end{array}$
- $\frac{8}{10} = 0.8$

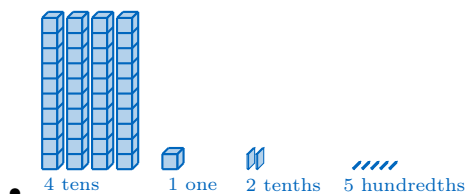
A.5 WRITING DECIMAL NUMBERS FROM EXPANDED FORMS

Ex 19: 4 tens + 1 one + 2 tenths + 5 hundredths = $\boxed{41.25}$

Answer:

- | Tens | Ones | . | Tenths | Hundredths |
|------|------|---|--------|------------|
| 4 | 1 | . | 2 | 5 |

- 4 tens + 1 one + 2 tenths + 5 hundredths = 41.25

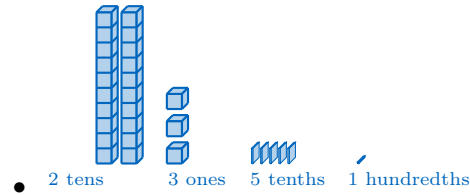


Ex 20: 2 tens + 3 ones + 5 tenths + 1 hundredth = $\boxed{23.51}$

Answer:

- | Tens | Ones | . | Tenths | Hundredths |
|------|------|---|--------|------------|
| 2 | 3 | . | 5 | 1 |

- 2 tens + 3 ones + 5 tenths + 1 hundredth = 23.51

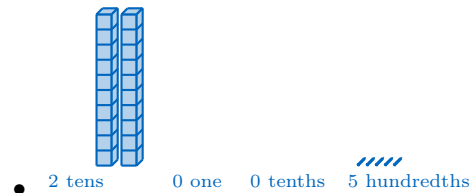


Ex 21: 2 tens + 5 hundredths = $\boxed{20.05}$

Answer:

- | Tens | Ones | . | Tenths | Hundredths |
|------|------|---|--------|------------|
| 2 | 0 | . | 0 | 5 |

- 2 tens + 5 hundredths = 20.05



Ex 22: 1 hundredth = $\boxed{0.01}$

Answer:

- | Ones | . | Tenths | Hundredths |
|------|---|--------|------------|
| 0 | . | 0 | 1 |

- 1 hundredth = 0.01

A.6 WRITING DECIMAL NUMBERS FROM EXPANDED FORMS II

Ex 23:

$$2 + 4 \times \frac{1}{10} + 1 \times \frac{1}{100} = \boxed{2.41}$$

Answer:

- $2 + 4 \times \frac{1}{10} + 1 \times \frac{1}{100} = \begin{array}{c} \text{2 ones} \quad \text{4 tenths} \quad \text{1 hundredth} \end{array}$
- $2 + 4 \times \frac{1}{10} + 1 \times \frac{1}{100} = 2.41$

Ex 24:

$$3 \times 10 + 1 + 2 \times \frac{1}{10} + 3 \times \frac{1}{100} = \boxed{31.23}$$

Answer:

- $3 \times 10 + 1 + 2 \times \frac{1}{10} + 3 \times \frac{1}{100} = \begin{array}{c} 3 \text{ tens} \quad 1 \text{ one} \quad 2 \text{ tenths} \quad 3 \text{ hundredths} \end{array}$

- $3 \times 10 + 1 + 2 \times \frac{1}{10} + 3 \times \frac{1}{100} = 31.23$

Ex 25:

$$1 + 3 \times \frac{1}{100} = \boxed{1.03}$$

Answer:

- $1 + 3 \times \frac{1}{100} = \overset{\text{1 one}}{\text{1}} \overset{\text{0 tenths}}{\text{0}} \overset{\text{3 hundredths}}{\text{3}}$
- $1 + 3 \times \frac{1}{100} = 1.03$

Ex 26:

$$9 + 9 \times \frac{1}{10} + 9 \times \frac{1}{100} = \boxed{9.99}$$

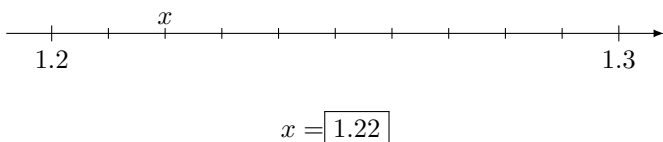
Answer:

- $9 + 9 \times \frac{1}{10} + 9 \times \frac{1}{100} = \overset{\text{9 ones}}{\text{9}} \overset{\text{9 tenths}}{\text{9}} \overset{\text{9 hundredths}}{\text{9}}$
- $9 + 9 \times \frac{1}{10} + 9 \times \frac{1}{100} = 9.99$

B ON THE NUMBER LINE

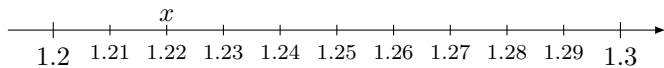
B.1 IDENTIFYING DECIMAL NUMBERS ON A NUMBER LINE

Ex 27: Find the value of x



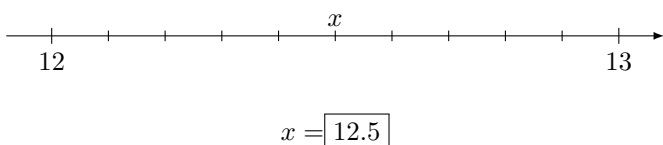
Answer:

- Each division on the number line represents 0.01.



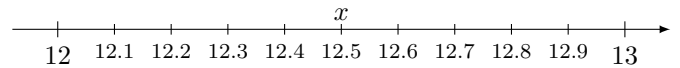
- $x = 1.22$

Ex 28: Find the value of x



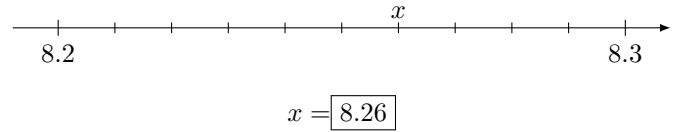
Answer:

- Each division on the number line represents 0.01.



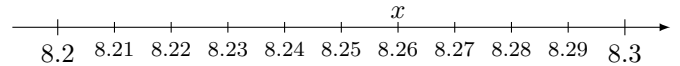
- $x = 12.5$

Ex 29: Find the value of x



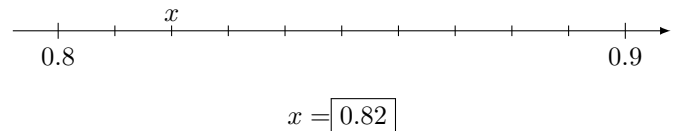
Answer:

- Each division on the number line represents 0.01.



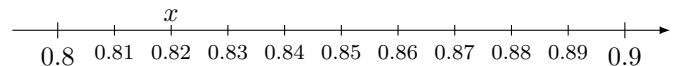
- $x = 8.26$

Ex 30: Find the value of x



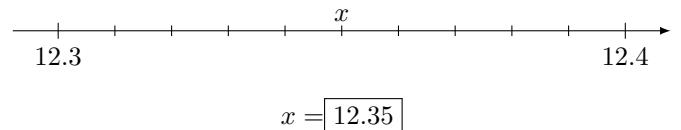
Answer:

- Each division on the number line represents 0.01.



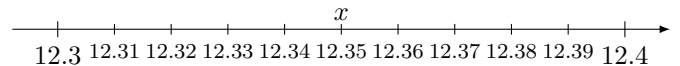
- $x = 0.82$

Ex 31: Find the value of x



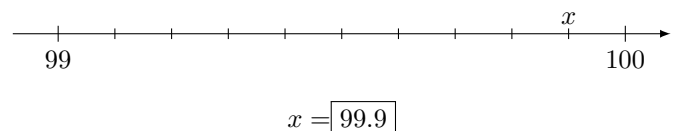
Answer:

- Each division on the number line represents 0.01.



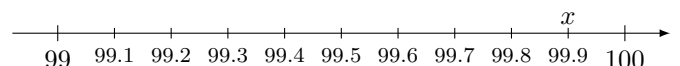
- $x = 12.35$

Ex 32: Find the value of x



Answer:

- Each division on the number line represents 0.1.



- $x = 99.9$