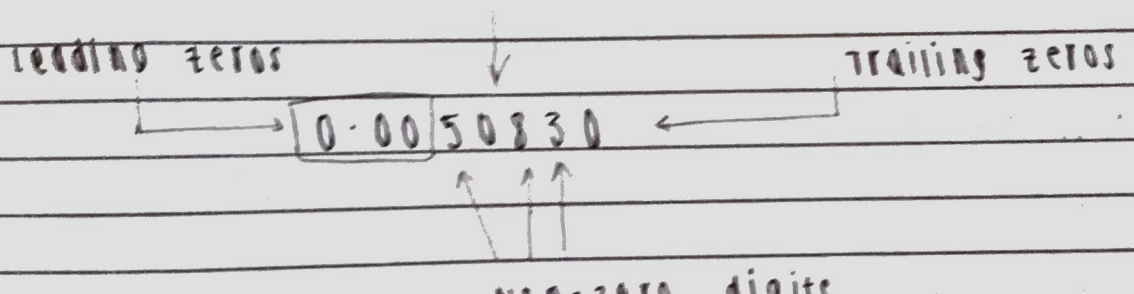
chap-1

29th NOV

significant digits / figures

└ Most valuable digits in a given no. is called significant digits

significant figures



• Rules to determine significant digits

Rule I: If a no. contains no zeros, all digits are significant

Eg:

	significant digits	No of significant digits
(a) 938	9,3,8	3
(b) 25·42	2, 5, 4, 2	4

ⓒ 1·7	1, 7	2

Rule 2 : All 0's bet" two non-0 digits are significant

Eg:	significant digits	No. of significa digit
ⓐ 506	5, 0, 6	3
ⓑ 10,052	1, 0, 0, 5, 2	5
ⓒ 900·431	9, 0, 0, 4, 3, 1	6

Rule 3: All 0's on • left of decimal & • right of decimal

are (not) significant when no. is les than one

Eg:

	S.D.	No. of S.D
ⓐ 0·06	6	1
ⓑ 0·0047	4, 7	2
ⓒ 0·005	5	1

Rule 4: When no. is greater than one w. decimal then all 0's on right side of decimal & left side of decimal will be significant figure.

- Eg:

	S.D.	No. of S.D.
(a) 2.020200	2, 0, 2, 0, 2, 0, 0	7
(b) 3.00540	3, 0, 0, 5, 4, 0	6
(c) 1.0230	1, 0, 2, 3, 0	5

Rule 5: A no. w/o decimal, all right side 0's on will not be significant fig. but when it comes from measurement then such 0's are significant

- Eg:

	S.D.	No. of S.D.
(a) 1000	1	1
(b) 1000 Kg	1, 0, 0, 0	4
(c) 2000	2	1

Rule 6: A final / trailing 0's in decimal position only are significant

- Eg:

	S.D.	No. of S.D.
(a) 0.0002500	2, 5, 0, 0	4
(b) 0.00390	3, 9, 0	3
(c) 39.00	3, 9, 0, 0	4

Q1A

How many significant digits in each of the following examples?

a) 47.1
b) 0.005965000
c) 560
d) 0.0509
e) 0.000009
f) 0.0001104
g) 701.905

		S.D.	No. of S.D.
(a)	47.1	4, 7, 1	3
(b)	0.005965000	5, 9, 6, 5, 0, 0, 0	7
(c)	560	5, 6	2

0·0509	5, 0, 9	3
0·000009	9	1
0·0000104	1, 0, 4	3
701·905	7, 0, 1, 9, 0, 5	6