

RUNNING NOTES

Cube and cube roots

Teacher's handwritten notes, typed

IN THESE NOTES

Cube of a number

Cube of a number :

$a \times a \times a$ can be written as a^3 (Read it as 'a' power 3 (or) 'a' cubed)

$$\therefore a^3 = a \times a \times a$$

$$1^3 = 1 \times 1 \times 1 = 1$$

$$2^3 = 2 \times 2 \times 2 = 8$$

$$3^3 = 3 \times 3 \times 3 = 27$$

$$4^3 = 4 \times 4 \times 4 = 64$$

$$5^3 = 5 \times 5 \times 5 = 125$$

$$6^3 = 6 \times 6 \times 6 = 216$$

$$7^3 = 7 \times 7 \times 7 = 343$$

$$8^3 = 8 \times 8 \times 8 = 512$$

$$9^3 = 9 \times 9 \times 9 = 729$$

$$10^3 = 10 \times 10 \times 10 = 1000$$

$\therefore$ Read this symbol therefore

$$49 \times 7 = 343$$

$$36 \times 6$$

Note $(-a)^3 = -a^3$

$$= -a \times -a \times -a$$

$$= -a^3$$

Ex $(-1)^3 = -1^3 = -1$

$$(-2)^3 = -2^3 = -8$$

$$(-3)^3 = -27$$

$$(-4)^3 = -64$$

$$(-5)^3 = -125$$

$$2^3 = 8$$

Ex $1^3 + 2^3 + 3^3 = \underline{\hspace{2cm}}$

$$= 1 + 8 + 27$$

$$= 36$$

Ex $1^3 + (-1)^3 = \underline{\hspace{2cm}}$

$$= 1 + (-1)$$

$$= 1 - 1$$

$$= 0$$

Ex $2^3 - 5^3 = \underline{\hspace{2cm}}$

$$= 8 - 125 = -117$$

Ans 35

36 ✓

Ans 0

Ans 117 ✗

-117 ✓

Ex $7^3 - 9^3 = \underline{\hspace{2cm}}$

Sol $= 343 - 729$
 $= -386$

H.W ① $a^3 + (-a)^3 = \underline{\hspace{2cm}}$

② $5^3 + (-5)^3 = \underline{\hspace{2cm}}$

③ $5^3 - (-5)^3 = \underline{\hspace{2cm}}$

④ $-3^3 - 5^3 = \underline{\hspace{2cm}}$

Ans -386

$729 - 343 = 386$ [worked as a subtraction]

⑤ $-1^3 - (-1)^3 =$

⑥ $1^2 + 2^3 + 3^3 + 4^3 + 5^3 =$