

**SHIVALIK PUBLIC SCHOOL
SECTOR 41-B CHANDIGARH**

POWERPOINT PRESENTATION

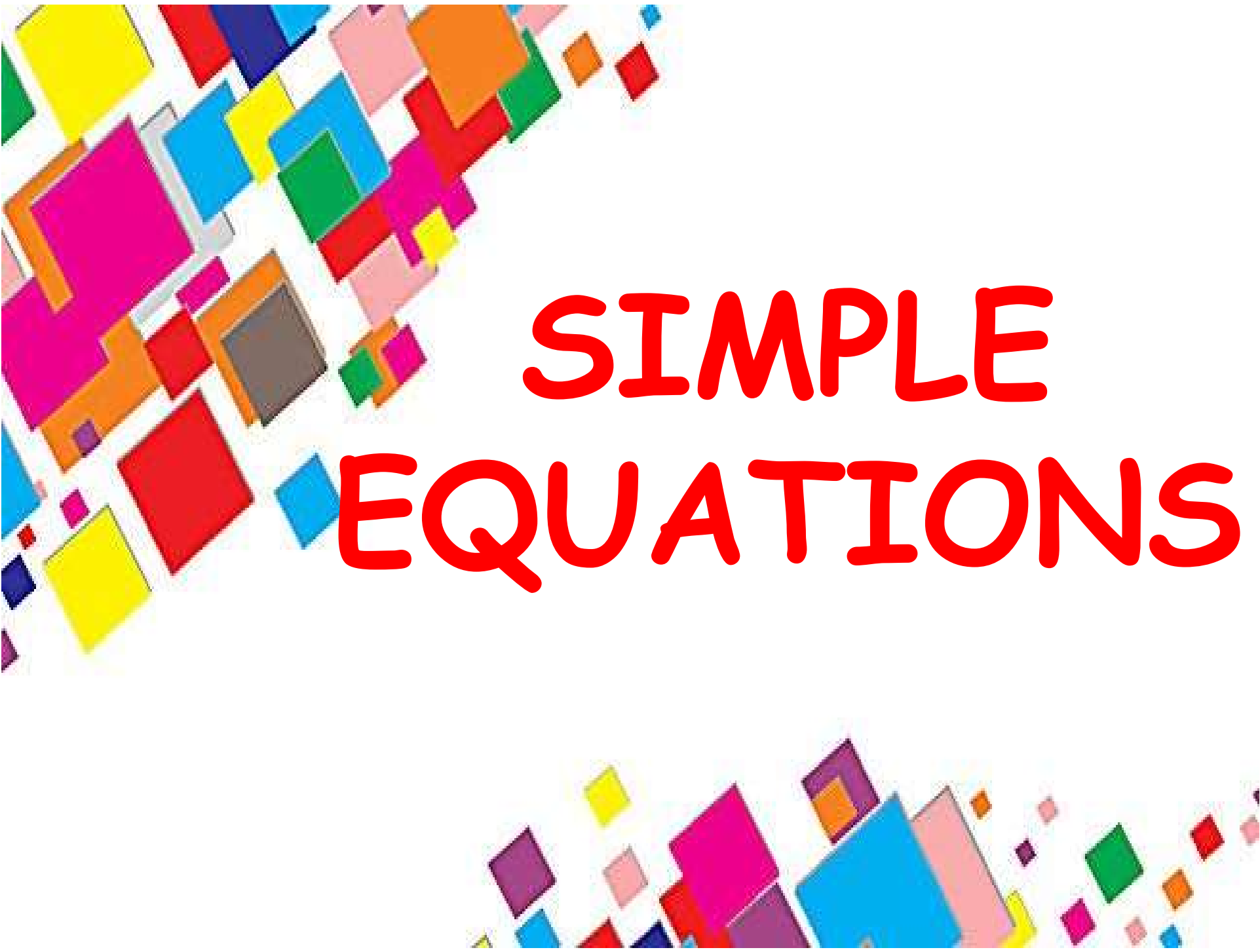
SUBJECT : MATHEMATICS

GRADE : 7

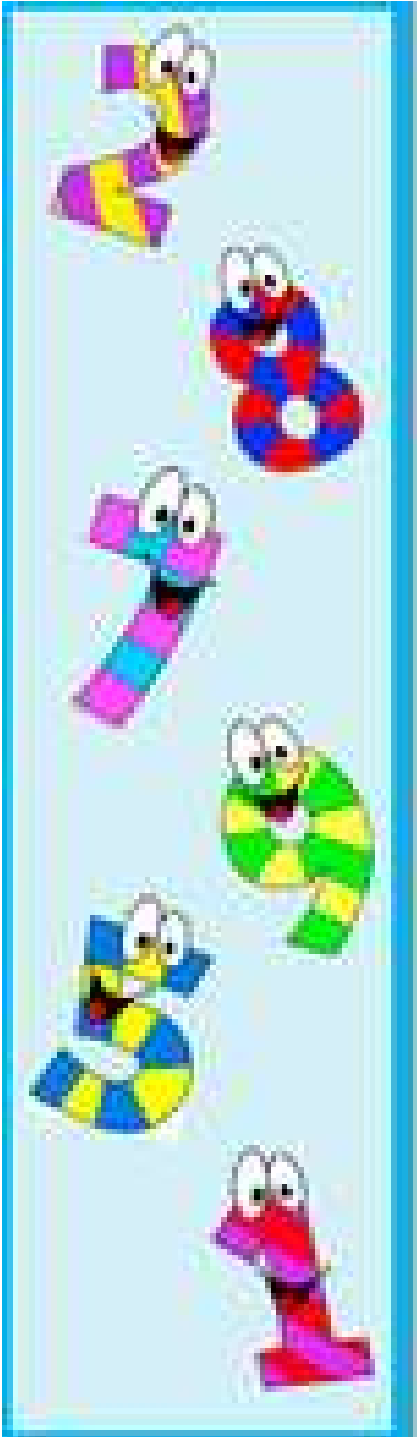
CHAPTER NO :4

**TITLE OF THE CHAPTER : SIMPLE
EQUATIONS**





SIMPLE EQUATIONS



CONSTANT

A fixed quantity that does not change.

VARIABLE

A variable is a symbol that we assign to an unknown values.

$$A = \pi r^2$$

+

$\neq$

$$\frac{2}{3}(12) = 50\% \text{ of } 16$$

$$2 \times 5 + 9 \div 3 < 6 + 7^2 - 19$$

%

$\div$

$$a^2 = b^2 + c^2$$

∞

$$7 \times 7 \times 7 \times 7 = 7^4$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\sqrt[4]{64} = \pm 4$$

∞

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

%

$$\sqrt{16} = 4$$

$\div$

$$a^2 = b^2 + c^2$$

$$A = \pi r^2$$

$$7 \times 7 \times 7 \times 7 = 7^4$$

$\neq$

$$\frac{2}{3}(12) = 50\% \text{ of } 16$$

$$2 \times 5 + 9 \div 3 < 6 + 7^2 - 19$$

COEFFICIENT

It is the number
that is placed in
front of variables.

$$A = \pi r^2$$

SIMPLE EQUATIONS

$$\sqrt[4]{64} = \pm 4$$

∞

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$\%$

$$\frac{2}{3}(12) = 50\% \text{ of } 16$$

$$2 \times 5 + 9 \div 3 < 6 + 7^2 - 19$$

$\%$

$\div$

$$\sqrt{16} = 4$$

$\div$

$$a^2 = b^2 + c^2$$

$$A = \pi r^2$$

$$a^2 = b^2 + c^2$$

$$\sqrt{16} = 4$$

∞

$$7 \times 7 \times 7 \times 7 = 7^4$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

An equation consists of two expressions separated by an equal sign.

$$7 \times 7 \times 7 \times 7 = 7^4$$

$\neq$

$$\frac{2}{3}(12) = 50\% \text{ of } 16$$

$$2 \times 5 + 9 \div 3 < 6 + 7^2 - 19$$

ARITHMETIC OPERATORS

It is a mathematical function that takes two operands and performs a calculation on them. Basic arithmetic operators include : addition(+), subtraction(-), multiplication($\times$) and division($\div$)

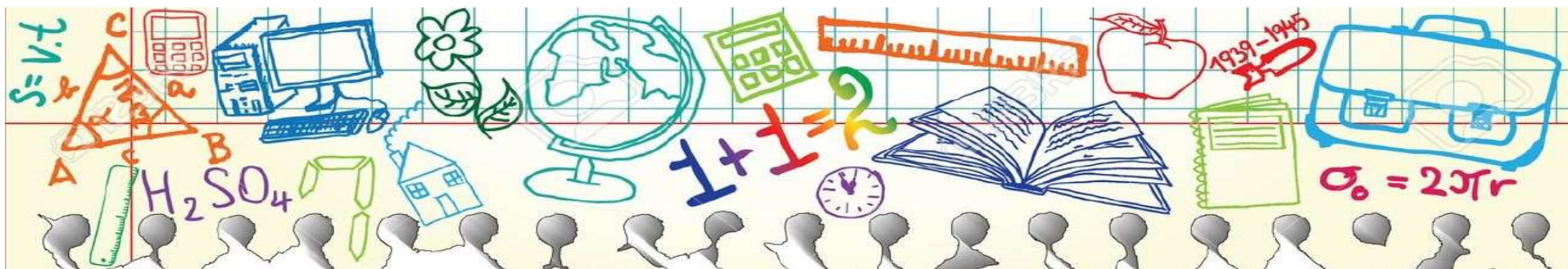
Coefficient

Variable

$$4x - 7 = 5$$

Operator

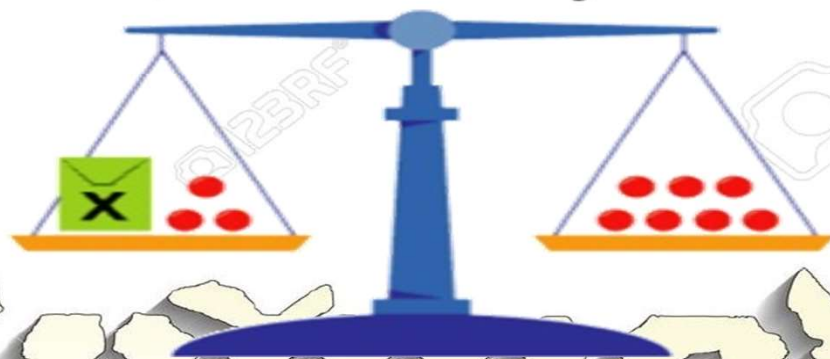
Constants



Equations Have to Balance!

- Both sides of the = sign must “weigh” the same!
- When you change one side, do the same to the other side, so it stays balanced!

$$x + 3 = 7$$



TO SOLVE AN EQUATION

1.To solve an equation of the form $x+a=b$

E.g.: Solve $x+4=10$

Solution: $x+4=10 \Rightarrow x+4-4=10-4$ (subtracting 4 from both the sides)

$$\Rightarrow x=6$$

2.To solve an equation of the form $x-a=b$

E.g.: Solve $y-6=5$ equal.

Solution: $y-6=5 \Rightarrow y-6+6=5+6$ (adding 6 to both sides)

$$\Rightarrow y=11$$


3. To solve an equation of the form $ax=b$

E.g.: Solve $3x=9$

Solution: $3x=9 \Rightarrow$

$$\Rightarrow \frac{3x}{3} = \frac{9}{3}$$

$$x=3$$

4. To solve an equation of the form $x/a=b$

E.g.: Solve $x/2 = 6$

Solution: $\frac{x}{2} = 6 \Rightarrow x/2 \times 2 = 6 \times 2$

$$\frac{x}{2} \Rightarrow x=12$$



SHORT- CUT METHOD (SOLVING AN EQUATION BY TRANSPOSING TERMS)

1. In an equation, an added term is transposed (taken) from one side to the other, it is subtracted.

i.e., $x+4=10$

$$\Rightarrow x=10-4=6 \quad (4 \text{ is transposed})$$

2. In an equation, a subtracted term is transposed to the other side, it is added.

i.e., $y-6=5$

$$\Rightarrow y=5+6=11 \quad (6 \text{ is transposed})$$

3. In an equation, a term in multiplication is transposed to the other side, it is divided.

i.e., $3x=12$

$$\Rightarrow x=12/3=4 \quad (3 \text{ is transposed})$$

4. In an equation a term in division is taken to the other side it is multiplied.

i.e

$$\Rightarrow y=6 \times 4=24 \quad (4 \text{ is transposed})$$



TO SOLVE EQUATIONS USING MORE THAN ONE PROPERTY

Solve: (1) $3x+8=14$

Solution: $3x=14-8$ (transposing 8)

$$\Rightarrow 3x=6$$

$\Rightarrow x=6/3$ (transposing 3)

$$\Rightarrow x=2$$


(2) $5n/8 = 20$

Solution: $5n = 20 \times 8$

$$\Rightarrow n = 20^4 \times 8 / 5^1$$

$$\Rightarrow n = 4 \times 8 = 32$$

