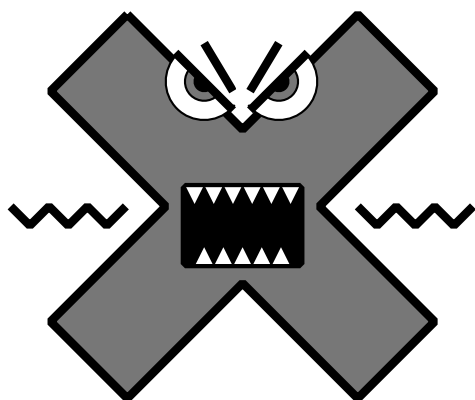


ALGEBRA



TAME THE MONSTER

Algebra I
The Glue of Mathematics
Equation Solving

Lesson 1

Algebra, Tame The Monster : Year 9

1.1 The Golden Rule

In algebra, there is one golden rule for solving all equations
DO THE SAME TO BOTH SIDES

1.2 Example

Question : Solve the equation $5x + 8 = -52$

Solution :

$$\begin{array}{l|l} 5x + 8 = -52 & \text{subtract 8 on both sides} \\ 5x = -60 & \text{divide by 5 on both sides} \\ x = -12 & \end{array}$$

Or :

$$\begin{array}{l|l} 5x + 8 = -52 & - 8 \\ 5x = -60 & \div 5 \\ x = -12 & \end{array}$$

1.3 Exercise

Question 1

(i) $3x + 4 = 13$

(ii) $2a - 7 = 1$

(iii) $4a + 3 = 11$

(iv) $5c + 6 = 26$

(v) $3 e + 2 = 23$

(vi) $2 a + 21 = 31$

(vii) $4 m - 5 = 19$

(viii) $5 t - 15 = 10$

(ix) $6 w - 13 = 5$

(x) $7 y - 6 = 29$

(xi) $6 h + 4 = 40$

(xii) $7 j + 5 = 33$

(xiii) $4 v + 1 = 37$

(xiv) $5 z + 24 = 64$

(xv) $3 c - 7 = 17$

(xvi) $4 w - 3 = 29$

(xvii) $6 e - 24 = 6$

(xviii) $4 a - 21 = 15$

Question 2

(i) $\frac{a}{3} + 5 = 13$

(ii) $\frac{e}{2} + 7 = 9$

(iii) $\frac{c}{4} + 8 = 11$

(iv) $\frac{h}{3} + 13 = 18$

(v) $\frac{m}{4} + 18 = 22$

(vi) $\frac{w}{2} - 6 = 3$

(vii) $\frac{a}{5} - 2 = 2$

(viii) $\frac{t}{3} - 4 = 6$

(ix) $\frac{v}{2} - 12 = 2$

(x) $3f + 4 = 22$

(xi) $6z + 32 = 80$

(xii) $7y - 11 = 10$

(xiii) $5 t - 27 = 28$

(xiv) $\frac{e}{4} + 32 = 43$

(xv) $\frac{a}{3} + 41 = 54$

(xvi) $\frac{c}{5} - 8 = 4$

(xvii) $\frac{h}{3} - 15 = 26$

(xvii) $\frac{w}{5} - 29 = 34$

Question 3

(i) $\frac{3e}{2} = 6$

(ii) $\frac{3c}{4} = 12$

(iii) $\frac{2t}{5} = 4$

(iv) $\frac{4w}{3} = 8$

(v) $\frac{5m}{2} = 20$

(vi) $\frac{6h}{5} = 30$

(vii) $\frac{4e}{3} = 16$

(viii) $\frac{3c}{7} = 27$

(ix) $\frac{7w}{3} = 49$

(x) $\frac{6a}{7} = 36$

(xi) $3a + 5 = 17$

(xii) $5e - 6 = 19$

(xiii) $\frac{c}{3} + 2 = 5$

(xiv) $\frac{h}{6} + 5 = 11$

(xv) $\frac{4m}{3} = 24$

(xvi) $\frac{2w}{5} = 14$

(xvii) $9y - 12 = 24$

(xviii) $\frac{t}{5} + 4 = 13$