

Year 9 Core – Linear Equations

1 Solve $x + 4 = 19$

$$x = 16$$

Solve $7y = 63$

$$y = 9$$

↓ ÷ 7

2

Solve $5 - m = 12$

$$5 - 12 = m$$

$$-7 = m$$

Solve $2a - 5 = 19$

$$2a = 24$$

$$a = 12$$

↓ + 5

↓ ÷ 2

3

Solve $\frac{d}{2} = 9.5$

$$d = 2 \times 9.5$$

$$d = 19$$

4

Solve $4(a - 3) = 22$

$$4a - 12 = 22$$

$$4a = 34$$

$$a = \frac{34}{4}$$

↓ + 12

↓ ÷ 4

5

Solve $5(x - 6) = 65$

$$5x - 30 = 65$$

$$5x = 95$$

$$x = 19$$

↓ + 30

↓ ÷ 5

6

Solve $\frac{y}{3} - 5 = 4$

$$\frac{y}{3} = 9$$

$$y = 3 \times 9$$

$$= 27$$

↓ + 5

↓ × 3

7

Solve $24 = 4(2x - 5)$

$$24 = 8x - 20$$

$$44 = 8x$$

$$\frac{44}{8} = x$$

$$\frac{11}{2} = x$$

$$\frac{11}{2} = x$$

simplify

↓ + 20

↓ ÷ 8

8

Solve $\frac{d+3}{4} = 5$

$$d + 3 = 20$$

$$d = 17$$

↓ × 4

↓ - 3

9

(a) Solve $6w = 4w + 9$

$$2w = 9$$

$$w = \frac{9}{2}$$

(b) Solve $3x + 8 = 2$

$$3x = -6 \quad \downarrow \div 3$$

$$x = -2$$

10

Solve $3x + 12 = 5x + 4$

$$12 = 2x + 4 \quad \downarrow -3x$$

$$8 = 2x \quad \downarrow -4$$

$$4 = x \quad \downarrow \div 2$$

11

Solve $2m - 20 = 10 + 7m$

$$-20 = 10 + 5m \quad \downarrow -2m$$

$$-30 = 5m \quad \downarrow -10$$

$$-\frac{30}{5} = m \quad \downarrow \div 5$$

$$-6 = m \quad \text{simply}$$

12

Solve $10 - 2s = s - 8$

$$10 = 3s - 8 \quad \downarrow + 2s$$

$$18 = 3s \quad \downarrow + 8$$

$$\frac{18}{3} = s \quad \downarrow \div 3$$

$$6 = s \quad \text{simply}$$

13

Solve $2x + 20 = 6x - 12$

$$20 = 4x - 12 \quad \downarrow -2x$$

$$34 = 4x \quad \downarrow + 12$$

$$\frac{34}{4} = x \quad \downarrow \div 4$$

$$\frac{17}{2} = x \quad \text{simply}$$