

## Solving Equations - Unknowns on Both Sides

1.

Solve these equations.

Show your working and check your answers.

(a)  $5n - 3 = 3n + 9$

(b)  $b - 2 = 5b - 18$

(c)  $2f + 11 = 4f - 5$

(d)  $4w - 9 = 3w + 2$

(e)  $7y - 12 = 4y - 3$

(f)  $s + 2 = 3s - 5$

(g)  $u - 20 = 6u - 120$

(h)  $5w + 21 = 8w - 30$

(i)  $6 + 6y = 8y - 10$

(j)  $6g - 2 = 1 + 4g$

(k)  $\frac{3}{4}p + \frac{3}{4} = p - 4$

(l)  $0.6g - 1 = 0.1g - 0.5$

(m)  $0.1f + 1 = 0.01f + 10$

(n)  $\frac{a}{2} + 12 = a - 2$

2.

Solve these equations.

Where there are brackets, replace them with an equivalent expression first.

(a)  $4(a - 3) = a + 30$

(b)  $2x + 13 = 3(x - 1)$

(c)  $4(y - 2) = 3(y + 1)$

(d)  $2(b - 1) = 3b - 11$

(e)  $7j + 12 = 3(j + 20)$

(f)  $5t - 20 = 3(t + 1)$

(g)  $18(x - 1) = 17(x + 1)$

(h)  $24 = 4(b - 1)$

(i)  $0.5(j + 4) = j - 1$

(j)  $2(b - 4) + 9 = 4(b - 2)$

(k)  $4 + 2(t - 6) = t$

(l)  $4(k + 1) - k = 8k - 20$

(m)  $s - 4 = 0.4(s - 1)$

(n)  $4z + 2 = 2(z - 1)$