

## Changing the subject.

### Rules

- 1 Changing the subject means that you change the letter that appears on its own.
- 2 You put the new subject on the left hand side of the equals sign.

### A Make **c** the subject of each of these equations

- |   |              |   |              |   |              |   |               |
|---|--------------|---|--------------|---|--------------|---|---------------|
| 1 | $c + 4 = d$  | 2 | $c + 7 = y$  | 3 | $c + 9 = k$  | 4 | $c + 12 = t$  |
| 5 | $h = c + 16$ | 6 | $g = c + 24$ | 7 | $k = c + 87$ | 8 | $z = c + 804$ |

### B Make **h** the subject of the equation.

- |   |              |   |              |   |              |   |               |
|---|--------------|---|--------------|---|--------------|---|---------------|
| 1 | $h - 4 = d$  | 2 | $h - 7 = y$  | 3 | $h - 9 = k$  | 4 | $h - 12 = t$  |
| 5 | $k = h - 16$ | 6 | $g = h - 24$ | 7 | $k = h - 87$ | 8 | $z = h - 804$ |

### C Make **k** the subject of these questions.

- |   |              |   |              |   |              |   |              |
|---|--------------|---|--------------|---|--------------|---|--------------|
| 1 | $k - 8 = f$  | 2 | $k + 5 = t$  | 3 | $k + 12 = y$ | 4 | $k - 11 = j$ |
| 5 | $k + 82 = w$ | 6 | $k - 16 = u$ | 7 | $k + 32 = p$ | 4 | $k - 23 = j$ |

### D Make **t** the subject of these equations.

- |   |          |   |           |   |           |   |           |
|---|----------|---|-----------|---|-----------|---|-----------|
| 1 | $4t = u$ | 2 | $8t = y$  | 3 | $12t = r$ | 4 | $5t = q$  |
| 5 | $s = 9t$ | 6 | $y = 10t$ | 7 | $w = 8t$  | 8 | $q = 18t$ |

### E Make **w** the subject of these equations.

- |   |               |    |               |    |                |    |                  |
|---|---------------|----|---------------|----|----------------|----|------------------|
| 1 | $3w + 7 = g$  | 2  | $7w - 5 = y$  | 3  | $6w + 11 = u$  | 4  | $3w - 18 = e$    |
| 5 | $r = 7w - 12$ | 6  | $v = 5w + 23$ | 7  | $q = 9w - 14$  | 8  | $s = 9w + w + 7$ |
| 9 | $3w + s = 18$ | 10 | $5w + t = 23$ | 11 | $35 = 8w + 2t$ | 12 | $w + 9 = 8 - w$  |

**F** Make  $k$  the subject of these equations.

|   |                     |    |                     |    |                      |    |                      |
|---|---------------------|----|---------------------|----|----------------------|----|----------------------|
| 1 | $w = \frac{k}{3}$   | 2  | $p = \frac{k}{5}$   | 3  | $t = \frac{k}{6}$    | 4  | $e = \frac{k}{9}$    |
| 5 | $q = \frac{k}{11}$  | 6  | $j = \frac{k}{23}$  | 7  | $n = \frac{k}{616}$  | 8  | $m = \frac{k}{48}$   |
| 9 | $q = \frac{3k}{11}$ | 10 | $j = \frac{7k}{23}$ | 11 | $n = \frac{9k}{616}$ | 12 | $m = \frac{16k}{48}$ |

**G** Make  $h$  the subject of these equations

|   |                  |    |                  |    |                   |    |                  |
|---|------------------|----|------------------|----|-------------------|----|------------------|
| 1 | $y = \sqrt{h}$   | 2  | $w = \sqrt{h}$   | 3  | $4t = \sqrt{h}$   | 4  | $3y = \sqrt{h}$  |
| 5 | $y = \sqrt{ht}$  | 6  | $w = \sqrt{hk}$  | 7  | $4t = \sqrt{hw}$  | 8  | $y = \sqrt{dh}$  |
| 9 | $y = \sqrt{h+5}$ | 10 | $w = \sqrt{h+7}$ | 11 | $4t = \sqrt{h+9}$ | 12 | $y = \sqrt{h-6}$ |

**H** Make  $p$  the subject of these equations.

|   |                        |    |                        |    |                         |    |                         |
|---|------------------------|----|------------------------|----|-------------------------|----|-------------------------|
| 1 | $p^2 = 6 + 3t$         | 2  | $p^2 = u + 8y$         | 3  | $p^2 = 6q + 3t$         | 4  | $p^2 = 5u + 3t$         |
| 5 | $p^2 = \frac{6+3t}{t}$ | 6  | $p^2 = \frac{u+8y}{k}$ | 7  | $p^2 = \frac{6q+3t}{3}$ | 8  | $p^2 = \frac{5u+3t}{y}$ |
| 9 | $t = 6 + 3p^2$         | 10 | $x = u + 8yp^2$        | 11 | $3t = 6q + p^2$         | 12 | $w = \frac{5u+3t}{p^2}$ |