



REARRANGING FORMULAE

TWO-STEP PROBLEMS

Ref: G241. **2S1a**

A1 Make x the subject of $y = ax + 3$	A2 Make x the subject of $y = \frac{x}{a} + 1$	A3 Make x the subject of $y = \frac{ax}{2}$	A4 Make x the subject of $y = a + \frac{x}{9}$
B1 Make x the subject of $b = \frac{x}{m} + n$	B2 Make x the subject of $p = qx - r$	B3 Make x the subject of $e = \frac{x+y}{4}$	B4 Make x the subject of $m = a(x - y)$
C1 Make x the subject of $s = mx + wz$	C2 Make x the subject of $q = \frac{x + mn}{k}$	C3 Make x the subject of $M = \frac{x}{2a} - p$	C4 Make x the subject of $w = \frac{x - 3gh}{5a}$
D1 Make x the subject of $a = x^2 + 7$	D2 Make x the subject of $w = \sqrt{x} - a$	D3 Make x the subject of $g = 5x^2$	D4 Make x the subject of $Z = \sqrt{x + 4}$
E1 The formula $v = u + at$ can be used to find the velocity of objects. Make t the subject of the formula.	E2 The area of a circle can be found using the formula $A = \pi r^2$. Make r the subject of the formula.	E3 Make a the subject of $v^2 = u^2 + 2as$	E4 The formula $V = \pi r^2 h$ can be used to find the volume of a cylinder. Make r the subject of the formula.



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<p>A1 Make x the subject of</p> $y = ax + 3 \quad ax = y - 3$ $x = \frac{y - 3}{a}$	<p>A2 Make x the subject of</p> $y = \frac{x}{a} + 1 \quad \frac{x}{a} = y - 1$ $x = a(y - 1)$	<p>A3 Make x the subject of</p> $y = \frac{ax}{2} \quad ax = 2y$ $x = \frac{2y}{a}$	<p>A4 Make x the subject of</p> $y = a + \frac{x}{9} \quad \frac{x}{9} = y - a$ $x = 9(y - a)$
<p>B1 Make x the subject of</p> $b = \frac{x}{m} + n \quad \frac{x}{m} = b - n$ $x = m(b - n)$	<p>B2 Make x the subject of</p> $p = qx - r \quad qx = p + r$ $x = \frac{p + r}{q}$	<p>B3 Make x the subject of</p> $e = \frac{x + y}{4} \quad x + y = 4e$ $x = 4e - y$	<p>B4 Make x the subject of</p> $m = a(x - y)$ $x - y = \frac{m}{a} \quad x = \frac{m}{a} + y$
<p>C1 Make x the subject of</p> $s = mx + wz \quad mx = s - wz$ $x = \frac{s - wz}{m}$	<p>C2 Make x the subject of</p> $q = \frac{x + mn}{k} \quad x + mn = kq$ $x = kq - mn$	<p>C3 Make x the subject of</p> $M = \frac{x}{2a} - p \quad \frac{x}{2a} = M + p$ $x = 2a(M + p)$	<p>C4 Make x the subject of</p> $w = \frac{x - 3gh}{5a} \quad x - 3gh = 5aw$ $x = 5aw + 3gh$
<p>D1 Make x the subject of</p> $a = x^2 + 7 \quad x^2 = a - 7$ $x = \sqrt{a - 7}$	<p>D2 Make x the subject of</p> $w = \sqrt{x} - a \quad \sqrt{x} = w + a$ $x = (w + a)^2$	<p>D3 Make x the subject of</p> $g = 5x^2 \quad x^2 = \frac{g}{5}$ $x = \sqrt{\frac{g}{5}}$	<p>D4 Make x the subject of</p> $Z = \sqrt{x + 4} \quad x + 4 = Z^2$ $x = Z^2 - 4$
<p>E1 The formula $v = u + at$ can be used to find the velocity of objects. Make t the subject</p> $t = \frac{v - u}{a}$	<p>E2 The area of a circle can be found using the formula $A = \pi r^2$. Make r the subject</p> $r = \sqrt{\frac{A}{\pi}}$	<p>E3 Make a the subject of</p> $v^2 = u^2 + 2as$ $a = \frac{v^2 - u^2}{2s}$	<p>E4 The formula $V = \pi r^2 h$ can be used to find the volume of a cylinder. Make r the subject</p> $r = \sqrt{\frac{V}{\pi h}}$