Rearranging formulae: powers and roots

Exit ticket ANSWERS Name _____

1. Make x the subject of $y = x^2 - 3$

$x = \pm\sqrt{y + 3}$

2. Make x the subject of $h = 2x^2 - 5$

$x = \pm\sqrt{\frac{h + 5}{2}}$

3. Make x the subject of $t = \sqrt{x} + 7$

$x = (t - 7)^2$

The Maths Habit

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Exit ticket Rearranging formulae: powers and roots

1 Make x the subject of $y = x^2 - 3$

$x = \pm\sqrt{y + 3}$

TESTS The inverse of a square: the inverse of − 3 first, then ±√

LOOK FOR

$x = 3 \pm \sqrt{y}$ square rooted before the inverse of − 3

$x = \sqrt{y + 3}$ missed the ±: −√ fits too

FIX IT

Make x the subject of $y = x^2 + 8$

$x = \pm\sqrt{y - 8}$

2 Make x the subject of $h = 2x^2 - 5$

$x = \pm\sqrt{\frac{h + 5}{2}}$

TESTS Two more operations: their inverses in reverse order, then ±√

LOOK FOR

$x = \pm\sqrt{\frac{h}{2} + 5}$ divided by 2 before the inverse of − 5

$x = \pm\sqrt{2(h + 5)}$ multiplied by 2 instead of dividing

FIX IT

Make x the subject of $a = 3x^2 + 2$

$x = \pm\sqrt{\frac{a - 2}{3}}$

3 Make x the subject of $t = \sqrt{x} + 7$

$x = (t - 7)^2$

TESTS The inverse of a square root: squaring, after the inverse of + 7

LOOK FOR

$x = t^2 - 7$ squared before the inverse of + 7

$x = t^2 - 49$ squared each term on its own

FIX IT

Make x the subject of $k = \sqrt{x} - 4$

$x = (k + 4)^2$