Inverse functions

Exit ticket ANSWERS Name _____

1. Find the number that went in: ? → × 4 → − 3 → 25.

7

2. $f(x) = 5x + 2$. Find $f^{-1}(x)$.

$f^{-1}(x) = \frac{x - 2}{5}$

3. $f(x) = 2(x + 4)$. Find $f^{-1}(x)$.

$f^{-1}(x) = \frac{x}{2} - 4$

The Maths Habit

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TESTS Working back through a machine: the last step first, the inverse of each step

LOOK FOR 97 25 put through the machine forwards

5.5 − 3 done again: its inverse is + 3

FIX IT

Find the number that went in: ? → × 3 → + 5 → 26. 7

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2 **f(x) = 5x + 2. Find f^{-1}(x).**

$f^{-1}(x) = \frac{x - 2}{5}$

TESTS f^{-1}(x) for a two step function, from the inverse row

LOOK FOR $\frac{x}{5} - 2$ the inverses in the wrong order: − 2 comes first

$\frac{x + 2}{5}$ the + 2 kept: its inverse is − 2

FIX IT

f(x) = 3x + 7. Find f^{-1}(x). $\frac{x - 7}{3}$

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3 **f(x) = 2(x + 4). Find f^{-1}(x).**

$f^{-1}(x) = \frac{x}{2} - 4$

TESTS The whole method with the steps the other way round: add first, then multiply

LOOK FOR $\frac{x - 4}{2}$ the inverses in the wrong order: ÷ 2 comes first

$\frac{x}{2} + 4$ the + 4 kept: its inverse is − 4

FIX IT

f(x) = 5(x + 1). Find f^{-1}(x). $\frac{x}{5} - 1$