$g(x) = 3x + 1$

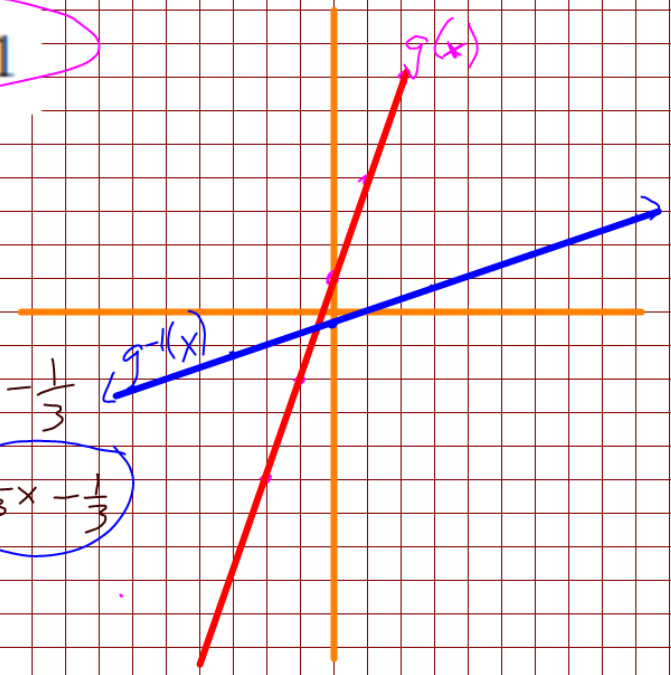
$y = 3x + 1$

$x = 3y + 1$

$x - 1 = 3y$

$\frac{x-1}{3} = y$ or $\frac{x}{3} - \frac{1}{3}$

$\frac{x-1}{3} = g^{-1}(x) = \frac{1}{3}x - \frac{1}{3}$



Find the inverse of each relation.

1. $\{(2, 4), (-3, 1), (2, 8)\}$

$(4, 2)\ (1, -3)\ (8, 2)$

$f(x) = 5x + 10$ and $g(x) = \frac{1}{5}x - 2$

$[f \circ g](x) = f\left(\frac{1}{5}x - 2\right) = 5\left(\frac{1}{5}x - 2\right) + 10$

$= x - 10 + 10$

$= x$ ← identity

yes

$[g \circ f](x) = g(5x+10) = \frac{1}{5}(5x+10) - 2$

$= x + 2 - 2$

$= x$ ← identity

$f(x) = 3x - 3$ and $g(x) = \frac{1}{3}x + 4$

$[f \circ g](x) = f\left(\frac{1}{3}x + 4\right) = 3\left(\frac{1}{3}x + 4\right) - 3$

$= x + 12 - 3$

$= x + 9$ ← not identity

no

$[g \circ f](x) = g(3x - 3) = \frac{1}{3}(3x - 3) + 4$

$= x - 1 + 4$

$= x + 3$ ← not identity

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10-13, 17, 21-22, 24, 27, 30-31, 33, 36-40, 45-46			