



Find the inverse of each relation.

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

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

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

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

$$= x - 10 + 10$$

$$= x \leftarrow \text{identity}$$

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

$$= x + 2 - 2$$

$$= x \leftarrow \text{identity}$$

yes

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

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

$$= x + 12 - 3$$

$$= x + 9 \leftarrow \text{not identity}$$

no

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

$$= x - 1 + 4$$

$$= x + 3 \leftarrow \text{not identity}$$

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