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## Inverse of a function | Past Paper Question | C3 Edexcel June 2013 Q7(c)

The function  $g$  is defined by

$$g: x \rightarrow \frac{4+3x}{5-x}, \quad x \in \mathbb{R}, \quad x \neq 5$$

(c) Find  $g^{-1}(x)$  (3)

$$\text{let } x = \frac{4+3y}{5-y}$$

$$\therefore x(5-y) = 4+3y$$

$$\therefore 5x - xy = 4 + 3y$$

$$\therefore 5x - 4 = 3y + xy$$

$$\therefore 5x - 4 = y(3+x)$$

$$\therefore y = \frac{5x-4}{3+x}$$

$$\therefore g^{-1}(x) = \frac{5x-4}{3+x}$$

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