

(1) Given that:

$$x^2 : (5x + 2) = 1 : 3$$

find the possible values of x .

Calculations and Answer

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(2) (a) Express $\sqrt{5} + \sqrt{20}$ in the form $a\sqrt{5}$ where a is an integer.

(b) Express $\left(\frac{1}{\sqrt{5}}\right)^5$ in the form $\frac{\sqrt{b}}{c}$ where b and c are integers.

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Calculations and Answer

(3) The functions f and h are such that

$$f(x) = 2x + 1 \quad \text{and} \quad h(x) = x^2 - 3$$

(a) Find $f^{-1}(x)$

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Given that $fh(x) = 3hf(x)$

(b) Show that

$$10x^2 + 12x - 1 = 0$$

Calculations and Answer

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