

1 You are given that $f(x) = 3x - 1$.

Express $f(5x + 2)$ in the form $ax + b$.

..... [2]

2 A function is given by

$$f(x) = 4x - 3.$$

(a) (i) Evaluate $f(7)$.

(a)(i) [1]

(ii) Find the exact value of $2f(\sqrt{5})$. Give your answer in the form $a\sqrt{5} + b$.

(ii) [2]

(b) Find x such that $4f(x) + 27 = 7$.

(b) [3]

3 You are given that $f(x) = 7x - 2$.

(a) Find $f(12)$.

(a) [1]

(b) You are also given that $f(x) + g(x) = 4$.

Find $g(x)$.

(b) [2]

4 You are given that $f(x) = 5x - 2$.

(a) Find the value of x when $f(x) = 1$.

(a) _____ [2]

(b) Find and simplify an expression for $f(1 + 2x)$.

(b) _____ [2]

5 You are given that $f(x) = 5x - 7$.

(a) Calculate $f(5.2)$.

(a) _____ [1]

(b) Work out an expression for $f(2 + 3t)$, writing your answer in the form $at + b$.

(b) _____ [3]

6 You are given that $f(x) = 7 - 2x$.

(a) Find $f(6)$.

(a) _____ [1]

(b) Solve $f(x) = 0$.

(b) _____ [1]

(c) Express $f(3 + x)$ in the form $a + bx$.

(c) _____ [2]

7 Given that $f(x) = x^2 - 3x + 1$, find and simplify an expression for $f(-4x)$.

..... [3]

8 You are given that $f(x) = 3x + 2$.

(a) Find $f(4)$.

(a) _____ [1]

(b) Write each of these in the form $ax + b$.

(i) $2f(x)$

(b)(i) _____ [1]

(ii) $f(2x)$

(ii) _____ [1]

- 9 (a) Rearrange this formula to make r the subject

$$S = 4\pi r^2$$

(a) _____ [3]

(b) $f(x) = \frac{3}{4x+6}$

- (i) Find $f(1)$.

(b)(i) _____ [1]

- (ii) Explain why $f(-1.5)$ cannot be evaluated. [1]

10 (a) $f(x) = 1 - 6x$.

(i) Solve $f(x) = 0$.

(a)(i) _____ [2]

(ii) $f(2x)$ can be expressed in the form $a + bx$.

Find the values of a and b .

(ii) $a =$ _____

$b =$ _____ [2]

(b) Write numbers in the boxes so that this is an identity.

$$4(x + 1) + 5x \equiv 7x + \square x + \square$$

[1]

11 (a) Rearrange this formula to make a the subject.

$$5(a + b) = 2ab$$

(a) [4]

(b) You are given that $f(x) = 2x - 5$.

(i) Find $f(3.5)$.

(b)(i) [1]

(ii) Express $f(3x + 4)$ in the form $ax + b$.

(ii) [2]