

### Finding Expressions for Transformed Functions

- (a) Given that  $f(x) = x + 5$ , find an expression for  $f(4x)$
- (b) Given that  $g(x) = \sqrt{x}$ , find an expression for  $g(x - 3)$
- (c) Given that  $h(x) = \frac{x}{2}$ , find an expression for  $h(x^2)$

- (a) Given that  $f(x) = 3x + 7$ , find an expression for  $f(x + 1)$
- (b) Given that  $g(x) = x^2 - 4$ , find an expression for  $g(2x)$
- (c) Given that  $h(x) = \frac{1}{3x}$ , find an expression for  $h(x - 4)$

- (a) Given that  $f(x) = x^2 + 2x - 1$ , find an expression for  $f(3x)$
- (b) Given that  $g(x) = \frac{x}{x+1}$ , find an expression for  $g(x + 5)$
- (c) Given that  $h(x) = \frac{x}{2} - 3$ , find an expression for  $h(11 + 4x)$ , giving your answer in the form  $ax + b$ , where  $a$  and  $b$  are constants.

- (a) Given that  $f(x) = 5 - 4x$ , solve  $f(x + 1) = 3$
- (b) Given that  $g(x) = x - 10$ , solve  $g(x^2) = 3x$
- (c) Given that  $h(x) = x^2$ , solve  $h(2x + 1) - h(x - 3) = 15x$

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