

### Exercise 1: Using Functional Notation

1. A function is given as  $f(x) = 6x - 5$ .  
Find: (a)  $f(3)$       (b)  $f(-1)$       (c)  $f(\frac{1}{2})$       (d)  $f(a)$
2. A function is given as  $f(x) = x^2 + 4$ .  
Find: (a)  $f(2)$       (b)  $f(4)$       (c)  $f(-3)$       (d)  $f(p)$
3. A function is given as  $h(a) = 12 - 2a$ .  
Find: (a)  $h(4)$       (b)  $h(6)$       (c)  $h(-2)$       (d)  $h(m)$
4. A function is defined as  $g(x) = x^2 + 3x$ .  
Find: (a)  $g(a)$       (b)  $g(2p)$       (c)  $g(m+1)$       (d)  $g(2-e)$
5. A function is defined as  $f(x) = x^2 - 4x$ .  
Find: (a)  $f(4)$       (b)  $f(3a)$       (c)  $f(a-2)$       (d)  $f(2p+1)$
6. A function is given as  $f(x) = 5x + 3$ . For what value of  $x$  is :  
(a)  $f(x) = 23$       (b)  $f(x) = -2$       (c)  $f(x) = 5$  ?
7. A function is given as  $h(t) = 20 - 6t$ . For what value of  $t$  is :  
(a)  $h(t) = 2$       (b)  $h(t) = -16$       (c)  $h(t) = 32$  ?
8. A function is given as  $g(a) = a^2 - 16$ . For what value(s) of  $a$  is :  
(a)  $g(a) = 9$       (b)  $g(a) = -15$       (c)  $g(a) = 0$  ?
9. A function is defined as  $f(x) = x^2 + 2x$ .  
(a) Evaluate:      (i)  $f(3)$       (ii)  $f(-2)$  .  
(b) Find  $f(a+3)$  in its simplest form.
10. A function is defined as  $h(a) = 33 - 6a$ .  
(a) Evaluate:      (i)  $h(4)$       (ii)  $h(-1)$  .  
(b) Given that  $h(t) = 0$ , find the value of  $t$ .  
(c) Express  $h(p-2)$  in its simplest form.

**Answers: Exercise 1**

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|-----|-----------------------------------|------------------|---------------------|---------------|
| 1.  | (a) 13                            | (b) -11          | (c) -2              | (d) $6a - 5$  |
| 2.  | (a) 8                             | (b) 20           | (c) 13              | (d) $p^2 + 4$ |
| 3.  | (a) 4                             | (b) 0            | (c) 16              | (d) $12 - 2m$ |
| 4.  | (a) $a^2 + 3a$<br>$e^2 - 7e + 10$ | (b) $4p^2 + 6p$  | (c) $m^2 + 5m + 4$  | (d)           |
| 5.  | (a) 0<br>$4p^2 - 4p - 3$          | (b) $9a^2 - 12a$ | (c) $a^2 - 8a + 12$ | (d)           |
| 6.  | (a) 4                             | (b) -1           | (c) $\frac{2}{5}$   |               |
| 7.  | (a) 3                             | (b) 6            | (c) -2              |               |
| 8.  | (a) $\pm 5$                       | (b) $\pm 1$      | (c) $\pm 4$         |               |
| 9.  | (a) (i) 15                        | (ii) 0           | (b) $a^2 + 8a + 15$ |               |
| 10. | (a) (i) 9                         | (ii) 39          | (b) 5.5             | (c) $45 - 6p$ |