Function notation and evaluating rules

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. For $f(x) = 4x - 7$, find $f(3)$. [2 marks]

$f(3) = 4(3) - 7 = 12 - 7 = 5.$

Answer: 5

2. For $f(x) = x^2 - 5x$, find $f(-2)$. [2 marks]

$f(-2) = (-2)^2 - 5(-2) = 4 + 10 = 14.$

Answer: 14

3. If $p(x) = 2x + 5$, simplify $p(a - 3)$. [2 marks]

$p(a - 3) = 2(a - 3) + 5 = 2a - 1.$

Answer: $2a - 1$

4. Find the input for which $g(x) = 7x + 2$ has output 30. [2 marks]

Solve $7x + 2 = 30$.

Then $7x = 28$, so $x = 4$.

Answer: $x = 4$

5. Let $r(x) = \frac{12}{x + 1}$. Find $r(2)$ and state an input that cannot be used. [2 marks]

$r(2) = \frac{12}{3} = 4.$

At $x = -1$ the denominator is zero.

Answer: $r(2) = 4$; $x = -1$ is excluded.

6. A delivery fee is $C(d) = 5 + 1.8d$ dollars for d kilometres. Find and interpret $C(10)$. [2 marks]

$C(10) = 5 + 1.8(10) = 23.$

The output is the total fee in dollars, not the distance.

Answer: 23 for a 10 km delivery.