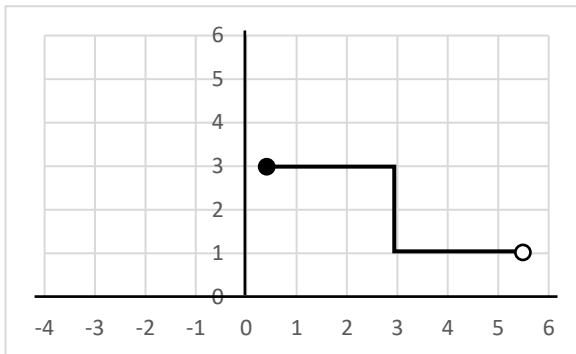


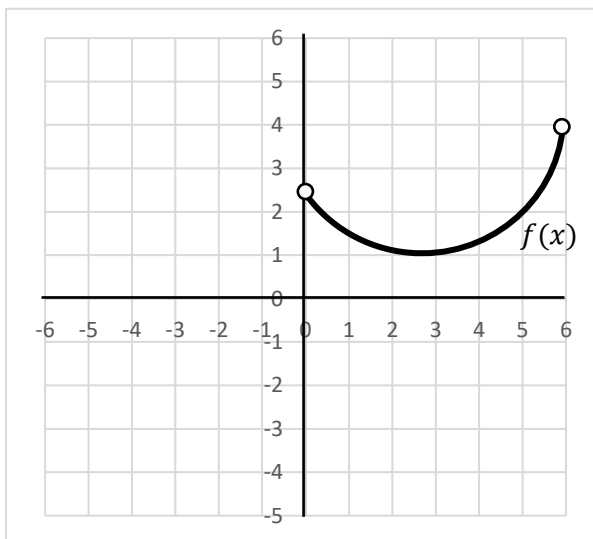
## Transformations – Exam practice

1. Consider the following:



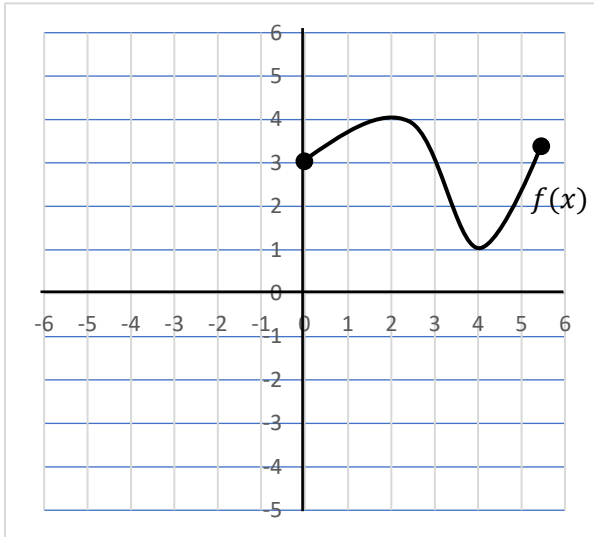
- State the value of  $y$  when  $x = 4$
- State the value of  $y$  when  $x = 2$
- Hence or otherwise, briefly explain why the figure shows a **relation** rather than a **function**.

2. Consider the following function:



- State the domain and range of  $f(x)$
- Sketch each of the following on the grid above. Use a different colour for each and label the functions clearly:
  - $g(x) = f(x + 4)$
  - $h(x) = f(-x)$
  - $j(x) = f(x) - 5$
- State the value of
  - $f(5)$
  - $f(x) = 3$

3. Consider the following function,  $f(x)$



a) Sketch each of the following,  $g(x)$  and  $h(x)$  on the grid above. Use a different colour for each and label the functions clearly. **Describe each of the transformations as well.**

i.  $g(x) = f(x + 3) - 4$

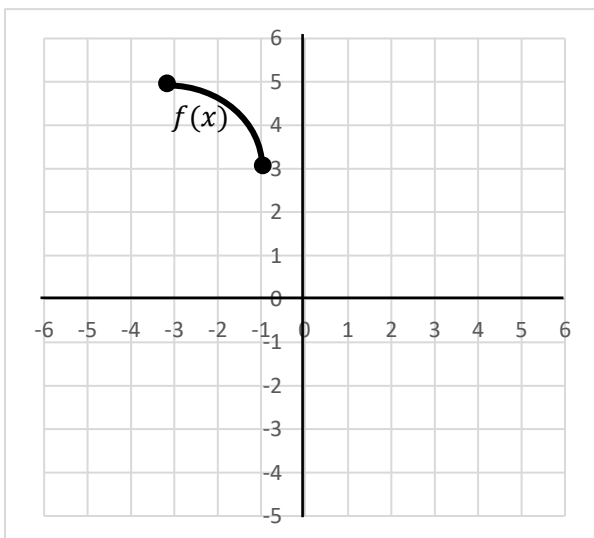
ii.  $h(x) = -f(x + 2)$

b) Evaluate the following:

i.  $f(3)$

ii.  $f \cdot f(2)$

4. Consider the following function,  $f(x)$



a) Draw  $f^{-1}(x)$  on the same axes.

b) Solve each of the following:

i)  $f(-3)$

ii)  $f^{-1}(3)$