

Higher Homework 05

1) Two functions f and g are defined by $f(x) = \frac{1}{x-4}$ and $g(x) = 2x + 3$.

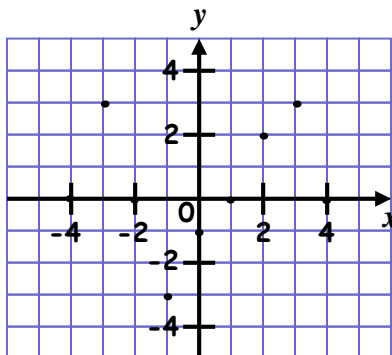
- a) Find an expression for $h(x) = f(g(x))$.
 b) Write down any restriction of the domain of h .



2) The graph of the function $f(x)$ is shown. Make a sketch of the graph of

- a) $5 - 2f(x)$
 b) $3f(2x)$

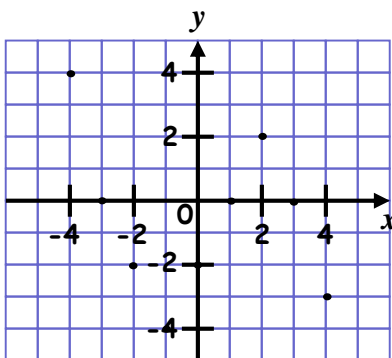
$(-4,0)$ $(-3,3)$ $(-2,0)$ $(-1,-3)$ $(0,-1)$ $(1,0)$ $(2,2)$ $(3,3)$ $(4,0)$



3) The graph of the function $f(x)$ is shown. Make a sketch of the graph of

- a) $3f(-x)$
 b) $2f(x+3) - 1$

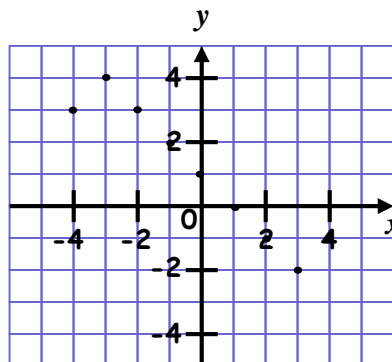
$(-4,4)$ $(-3,0)$ $(-2,-2)$ $(-1,-4)$ $(0,-2)$ $(1,0)$ $(2,2)$ $(3,0)$ $(4,-3)$



4) The graph of the function $f(x)$ is shown. Make a sketch of the graph of

- a) $-f(x+2)$
 b) $f(2x)+1$

$(-4,3)$ $(-3,4)$ $(-2,3)$ $(-1,2)$ $(0,1)$ $(1,0)$ $(2,-1)$ $(3,-2)$ $(4,-1)$



5) Express each of the following in the form $(x+a)^2 + b$

- a) $x^2 + 6x + 15$ b) $x^2 - 9x - 2$



6) $f(x) = 5x^2 - 7x + 3$

Evaluate $f(-3)$.

