

MCR 3U

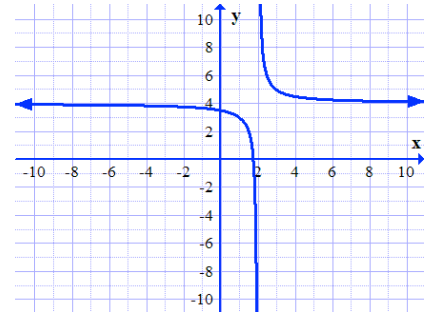
1. If $f(x) = x^2 - 3x$ and $g(x) = 2x + 1$, determine: [9]

- a) $f(5)$ b) x when $f(x) = 28$ c) $f(g(1))$ d) $g(g(x))$ e) $f(x) - g(x)$

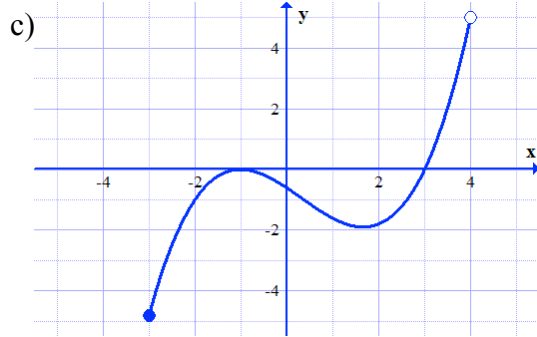
2. For each of the following, state if it represents a function and state the domain and range: [6]

a) $M = \{(4,-1), (3,-2), (4,-3), (5,-4)\}$

b)

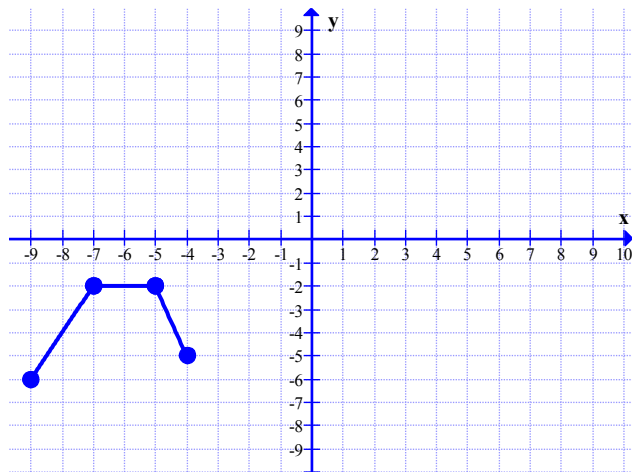


d) $y = -4(x - 5)^2 + 3$



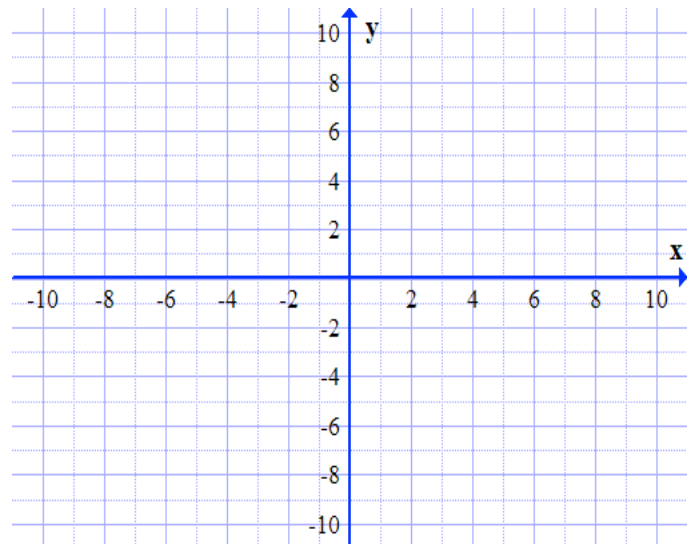
3. Given $y = h(x)$ as shown: [3]

- a) Graph $y = 8 + h(x)$
 b) Graph $y = h(1 - x)$



4. Given $g(x) = \sqrt{x - 3} + 2$ [6]

- a) Graph $g(x)$
 b) Graph $-g(x)$ and $g(-x)$ and $g^{-1}(x)$
 c) Determine the equations for $-g(x)$ and $g(-x)$



4. Given $f(x) = (x + 3)^2 + 1$, [5]

- a) find $f(-x)$
 b) Would any invariant points exist? If so, where?