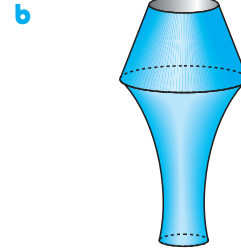
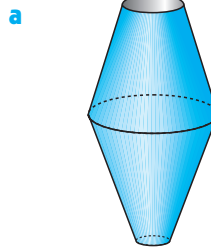


7 Find a , b and c if $f(0) = 5$, $f(-2) = 21$ and $f(3) = -4$ for $f(x) = ax^2 + bx + c$.

8 For each of the following containers draw a 'depth v time' graph as water is added.



9 Consider $f(x) = \frac{1}{x^2}$.

- a For what value of x is $f(x)$ meaningless?
- b Sketch the graph of this function using technology.
- c State the domain and range of the function.

10 If $f(x) = 2x - 3$ and $g(x) = x^2 + 2$, find in simplest form:

- a $f(g(x))$
- b $g(f(x))$

11 If $f(x) = 1 - 2x$ and $g(x) = \sqrt{x}$, find in simplest form:

- a $(f \circ g)(x)$
- b $(g \circ f)(x)$

12 Find an f and a g function given that:

a $f(g(x)) = \sqrt{1 - x^2}$

b $g(f(x)) = \left(\frac{x-2}{x+1}\right)^2$

REVIEW SET 1B

1 If $f(x) = 5 - 2x$, find a $f(0)$ b $f(5)$ c $f(-3)$ d $f(\frac{1}{2})$

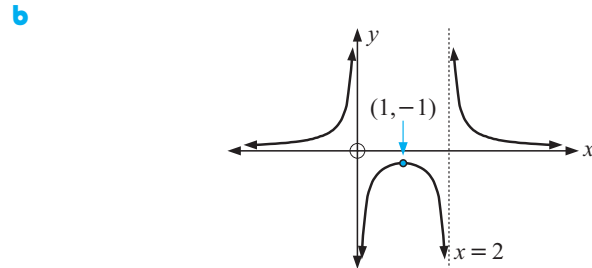
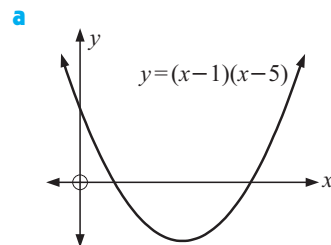
2 If $g(x) = x^2 - 3x$, find in simplest form a $g(x + 1)$ b $g(x^2 - 2)$

3 For each of the following functions $f(x)$ find $f^{-1}(x)$:

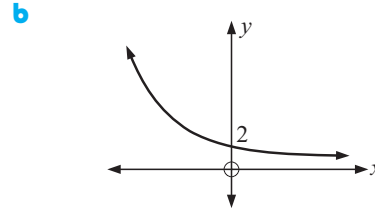
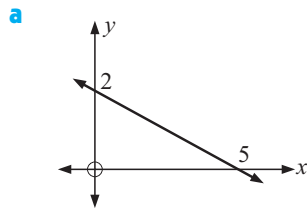
a $f(x) = 7 - 4x$

b $f(x) = \frac{3 + 2x}{5}$

4 For each of the following graphs, find the domain and range.

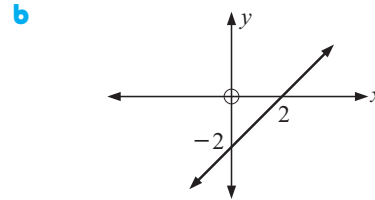
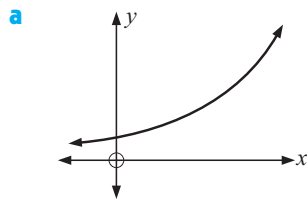


5 Copy the following graphs and draw the graph of each inverse function:



6 Find $f^{-1}(x)$ given that $f(x)$ is: **a** $4x + 2$ **b** $\frac{3 - 5x}{4}$

7 Copy the following graphs and draw the graph of each inverse function:



8 Given $f(x) = 2x + 11$ and $g(x) = x^2$, find $(g \circ f^{-1})(3)$.

9 Consider $x \mapsto 2x - 7$.

- a** On the same set of axes graph $y = x$, f and f^{-1} .
- b** Find $f^{-1}(x)$ using coordinate geometry.
- c** Find $f^{-1}(x)$ using variable interchange.

- 10 **a** Sketch the graph of $g : x \mapsto x^2 + 6x + 7$.
- b** Explain why g for $x \leq -3$ has an inverse function g^{-1} .
- c** Find algebraically, the equation of g^{-1} .
- d** Sketch the graph of g^{-1} .

11 Given $h : x \mapsto (x - 4)^2 + 3$ where $x \geq 4$, find the defining equation of h^{-1} .

12 Given $f : x \mapsto 3x + 6$ and $h : x \mapsto \frac{x}{3}$, show that $(f^{-1} \circ h^{-1})(x) = (h \circ f)^{-1}(x)$.