

**45.** Let  $f(x) = 16x^4$  and  $g(x) = 4x^2$ .

- (a) If  $f(x) = g(h(x))$ , find a possible formula for  $h(x)$ , assuming  $h(x) \leq 0$  for all  $x$ .
- (b) If  $f(x) = j(2g(x))$ , find a possible formula for  $j(x)$ , assuming  $j(x)$  is a power function.

**46.** Consider the power function  $y = t(x) = k \cdot x^{p/3}$  where

$p$  is any integer,  $p \neq 0$ .

- (a) For what values of  $p$  does  $t(x)$  have domain restrictions? What are those restrictions?
- (b) What is the range of  $t(x)$  if  $p$  is even? If  $p$  is odd?
- (c) What symmetry does the graph of  $t(x)$  exhibit if  $p$  is even? If  $p$  is odd?