



## Quiz 5.3 – Implicit Differentiation and Inverse Functions

1. (1 pt) [alfredLibrary/AUCI/chapter5/lesson3/quiz/implicit21pet.pg](#)  
Compute the derivative of  $y$  for each equation.

(a) If  $y = 4x^3$ , then  $\frac{dy}{dx} =$  \_\_\_\_\_.

(b) If  $x^2 + y^3 = 40$ , then  $\frac{dy}{dx} =$  \_\_\_\_\_.

(c) If  $xy^2 = 28$ , then  $\frac{dy}{dx} =$  \_\_\_\_\_.

2. (1 pt) [alfredLibrary/AUCI/chapter5/lesson3/quiz/inversetable1pet.pg](#)

If the function  $g(x)$  is defined by the table

$x$	-6	-4	-2	0	2	4	6
$g(x)$	0	-2	2	6	4	-4	-6

then the inverse function  $g^{-1}(x)$  is defined by the table

$x$	-6	-4	-2	0	2	4	6
$g^{-1}(x)$	—	—	—	—	—	—	—

3. (1 pt) [alfredLibrary/AUCI/chapter5/lesson3/quiz/inversesolve1pet.pg](#)

The inverse of the function  $f(x) = 4x - 5$  is  $f^{-1}(x) =$