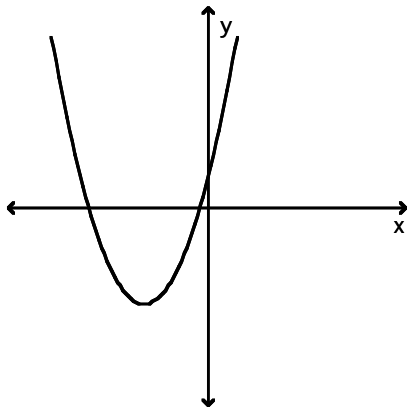# Inverse Functions

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

**Does the graph represent a function that has an inverse function?**
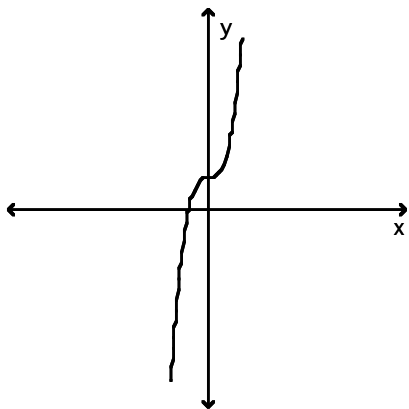
1)



    A) No                                  B) Yes

2)



    A) No                                  B) Yes

**Find the inverse of the one–to–one function.**

3) $f(x) = 7x + 8$

    A) $f^{-1}(x) = \dfrac{x - 8}{7}$                          B) $f^{-1}(x) = \dfrac{7x - 8}{7}$

    C) $f^{-1}(x) = \dfrac{y - 8}{7}$                          D) $f^{-1}(x) = \dfrac{x + 8}{7}$

4) $f(x) = \dfrac{3x + 1}{4}$

    A) $f^{-1}(x) = \dfrac{4x - 1}{3}$                          B) $f^{-1}(x) = \dfrac{4}{3x - 1}$

    C) $f^{-1}(x) = \dfrac{4x + 1}{3}$                          D) $f^{-1}(x) = \dfrac{4}{3x + 1}$

**Determine whether the given function is one–to–one. If it is one–to–one, find its inverse.**

5) $f(x) = \sqrt[3]{x+6}$

5) _____

    A) $f^{-1}(x) = (x+6)^3$                                B) $f^{-1}(x) = x^3 - 6$

    C) $f^{-1}(x) = \sqrt[3]{x} + 6$                           D) $f^{-1}(x) = (x-6)^3$

**If the function is one–to–one, find its inverse. If not, write "not one–to–one."**

6) $f(x) = \dfrac{2}{x-5}$

6) _____

    A) $f^{-1}(x) = \dfrac{-5+2x}{x}$                      B) $f^{-1}(x) = \dfrac{x}{-5+2x}$

    C) $f^{-1}(x) = \dfrac{5x+2}{x}$                       D) not a one–to–one

7) $f(x) = x^3 - 8$

7) _____

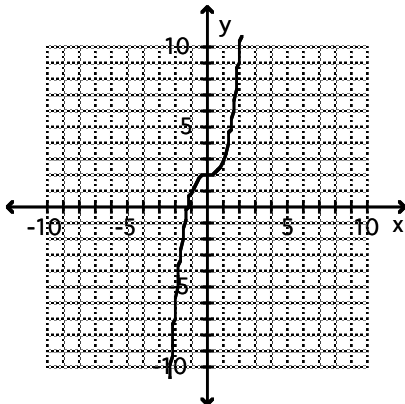    A) $f^{-1}(x) = \sqrt[3]{x} + 8$                      B) $f^{-1}(x) = \sqrt[3]{x+8}$

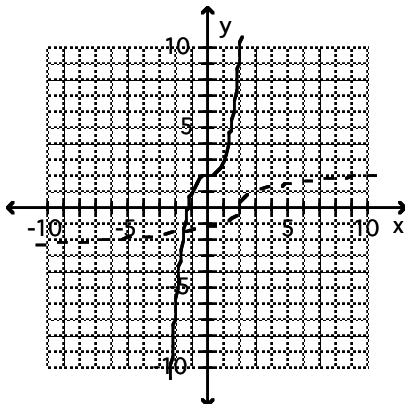    C) not a one–to–one                             D) $f^{-1}(x) = \sqrt[3]{x-8}$

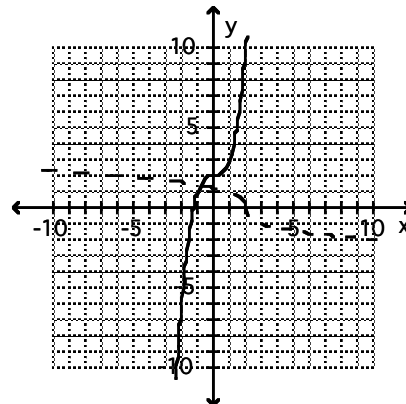**Use the graph of f to draw the graph of its inverse function.**

8)

8) _____



A)



B)



2

1) A
2) B
3) A
4) A
5) B
6) C
7) B
8) A