Determine whether $f(x) = \sqrt{x+2}$ has an inverse function. If it does, find the inverse function and state its domain.

ATTEMPT 1

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- ◉ $f^{-1}(x) = x^2 - 2$, Domain: $[0, \infty)$ ✓
- ○ $f^{-1}(x) = x^2 - 2$, Domain: $(-\infty, \infty)$
- ○ $f^{-1}(x) = x^2 + 2$, Domain: $[0, \infty)$
- ○ $f^{-1}(x)$ does not exist.

Find the inverse of $f(x) = \sqrt{x+5} - 2$ and state its domain.

ATTEMPT 1

- $f^{-1}(x) = (x-2)^2 - 5$; Domain: $[-2, \infty)$

- $f^{-1}(x) = (x+2)^2 - 5$; Domain: $[-2, \infty)$ ✓

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- $f^{-1}(x) = (x+2)^2 - 5$; Domain: $(-\infty, -2]$

- $f^{-1}(x) = (x-2)^2 - 5$; Domain: $(-\infty, -2]$

Find the inverse of $f(x) = \sqrt[3]{x-4} + 6$ and state its domain.

ATTEMPT 1

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- ◉ $f^{-1}(x) = (x-6)^3 + 4$; Domain: $(-\infty, \infty)$ ✓
- ○ $f^{-1}(x) = (x+6)^3 - 4$; Domain: $[0, \infty)$
- ○ $f^{-1}(x) = (x-6)^3 + 4$; Domain: $(-\infty, 0)$
- ○ $f^{-1}(x) = (x-6)^3 + 4$; Domain: $[4, \infty)$

***Choose the correct answer from the drop-down menu.***

Find the inverse of $f(x) = x^2 + 4x + 4,\ x \geq -2$ and state its domain.

1. $f^{-1}(x) = \sqrt{x} - 2$ ; Domain: $[0, \infty)$ ✓

1. $f^{-1}(x) = \sqrt{x} - 2$; Domain: $[0, \infty)$ ✓

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For a major automobile repair, the function $f(x) = 50x + 700$ models the total cost in dirhams for $x$ hours of work on the automobile. A mechanic expects that the work will take between 6 and 12 hours. Find the inverse function and state and interpret the domain of the inverse function.

**ATTEMPT 1**

- ◉ $f^{-1}(x) = \frac{x - 700}{50}$; Domain [1000, 1300], which represents the total cost of the repairs ✓
- ○ $f^{-1}(x) = \frac{x + 700}{50}$; Domain [6, 12], which represents the time spent working on the automobile

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- ○ $f^{-1}(x) = \frac{x + 700}{50}$; Domain [1000, 1300], which represents the total cost of the repairs
- ○ $f^{-1}(x) = \frac{x - 700}{50}$; Domain [6, 12], which represents the time spent working on the automobile

The formula $f(x) = \frac{5}{9}(x - 32)$ is used to convert from degrees Fahrenheit to degrees Celsius.

Suppose on a recent vacation, the temperature fell between $68°$ F and $86°$ F, inclusive. Find the inverse function and state and interpret the domain of the inverse function.

**ATTEMPT 1**

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- $f^{-1}(x) = \frac{9}{5}x - 32$; Domain [20, 30], which represents the set of temperatures in degrees Celsius
- $f^{-1}(x) = \frac{9}{5}x + 32$; Domain [68, 86], which represents the set of temperatures in degrees Fahrenheit ✗
- $f^{-1}(x) = \frac{9}{5}x - 32$; Domain [68, 86], which represents the set of temperatures in degrees Fahrenheit
- $f^{-1}(x) = \frac{9}{5}x + 32$; Domain [20, 30], which represents the set of temperatures in degrees Celsius ✓

Determine whether $f(x) = \sqrt[3]{x+4}$ has an inverse function. If it does, find the inverse function and state its domain.

- ◉ $f^{-1}(x) = x^3 + 4$, Domain: $(-\infty, \infty)$ ✗
- ○ $f^{-1}(x) = x^3 - 4$, Domain: $(-\infty, \infty)$ ✓
- ○ $f^{-1}(x) = x^3 - 4$, Domain: $[0, \infty)$
- ○ $f^{-1}(x)$ does not exist.

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A student club is raising money for a class trip. The function $f(x) = 15x - 600$ models the total profit for selling $x$ calendars. The club purchased 200 calendars and will sell at least 50 calendars. Find the inverse function and state and interpret the domain of the inverse functions.

- $f^{-1}(x) = \frac{x + 600}{15}$; Domain [50, 200], which represents the possible number of calendars sold
- $f^{-1}(x) = \frac{x - 600}{15}$; Domain [150, 2400], which represents the possible amounts the club raised

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- ✓ $f^{-1}(x) = \frac{x + 600}{15}$; Domain [150, 2400], which represents the possible amounts the club raised
- $f^{-1}(x) = \frac{x - 600}{15}$; Domain [50, 200], which represents the possible number of calendars sold

Use a graphing calculator to determine whether an inverse function for each function exists.

$f(x) = x^3 + 4x$ and $g(x) = x^2 - 4x + 8$

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- Neither $f^{-1}$ nor $g^{-1}$ exist.
- ◉ $f^{-1}$ exists and $g^{-1}$ does not exist. ✓
- $f^{-1}$ does not exist and $g^{-1}$ exists.
- $f^{-1}$ and $g^{-1}$ both exist.