Objective 4 - Inverse

Find the inverse of a function, if it exists.

[Link to section in online textbook](#)

First, watch [this video](#) to learn when a function has an inverse and how to find the inverse of a function. Feel free to pause the video and fill out the notes as you go.

Question   1 *Determine whether the function below is 1-1.*

$$f(x) = -(4\,x + 3)^3 - 7$$

If $f(x)$ is 1-1, find the inverse function. If $f(x)$ is not 1-1, put "NA".

$$f^{-1}(x) = \boxed{-\frac{1}{4}\,(x + 7)^{\frac{1}{3}} - \frac{3}{4}}$$

Feedback(attempt):   *To find the inverse of a function, switch x and y, then solve for y. Don't round.*

Question   2 *Determine whether the function below is 1-1.*

$$f(x) = (7\,x + 5)^2 + 5$$

If $f(x)$ is 1-1, find the inverse function. If $f(x)$ is not 1-1, put "NA".

$$f^{-1}(x) = \boxed{NA}$$

Feedback(attempt):   *To find the inverse of a function, switch x and y, then solve for y. Don't round.*

Question   3 *Determine whether the function below is 1-1.*

$$f(x) = -6\,x + 5$$

If $f(x)$ is 1-1, find the inverse function. If $f(x)$ is not 1-1, put "NA".

$$f^{-1}(x) = \boxed{-\frac{1}{6}\,x + \frac{5}{6}}$$

***Feedback*(attempt):** To find the inverse of a function, switch x and y, then solve for y. Don't round.

Question 4 *Determine whether the function below is 1-1.*

$$f(x) = \sqrt{-2\,x + 2} - 4$$

If $f(x)$ is 1-1, find the inverse function. If $f(x)$ is not 1-1, put "NA".

$$f^{-1}(x) = \boxed{-\frac{1}{2}\,(x + 4)^2 + 1}$$

***Feedback*(attempt):** To find the inverse of a function, switch x and y, then solve for y. Don't round.

Question 5 *Determine whether the function below is 1-1.*

$$f(x) = (-6\,x - 5)^{\frac{1}{3}} - 4$$

If $f(x)$ is 1-1, find the inverse function. If $f(x)$ is not 1-1, put "NA".

$$f^{-1}(x) = \boxed{-\frac{1}{6}\,(x + 4)^3 - \frac{5}{6}}$$

***Feedback*(attempt):** To find the inverse of a function, switch x and y, then solve for y. Don't round.