1. Motivating observation: Implicit differentiation can be used to find the derivatives of inverses.

2. Graph $f(x) = \sin(x)$ and $f^{-1} = \sin^{-1}(x)$ on different axes.

3. Graph $f(x) = \cos(x)$ and $f^{-1} = \cos^{-1}(x)$ on different axes.

4. Graph $f(x) = \tan(x)$ and $f^{-1} = \tan^{-1}(x)$ on different axes.

5. Formulas for the derivatives of inverse trigonometric functions.

6. Use the formulas on the previous page to find the derivatives of the functions below:

(a) $f(x) = \arcsin(2x)$

(b) $f(x) = 5x \arctan(\sqrt{x})$

7. Use implicit differentiation to find the derivatives of the functions below.

(a) $f(x) = \arcsin(x)$

(b) $f(x) = \arccos(x)$

(c) $f(x) = \arctan(x)$

3-7 Derivatives of Inverses