



## Homework 6.4 – Other Trigonometric Functions

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### 1. (1 pt) [alfredLibrary/AUCI/chapter6/lesson4/quiz/question1.pg](#)

Evaluate the exact value of each limit. Decimal answers are not allowed. (Hint: look at the graph of  $\tan^{-1}(x)$ .)

(a)  $\lim_{x \rightarrow +\infty} \tan^{-1}(x) = \underline{\hspace{2cm}}$

(b)  $\lim_{x \rightarrow -\infty} \tan^{-1}(x) = \underline{\hspace{2cm}}$

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### 2. (1 pt) [alfredLibrary/AUCI/chapter6/lesson4/inversetrigderiv2pet.pg](#)

Write your answers carefully on paper first! Also, note that  $g$  and  $h$  are compositions of three functions.

(a) If  $f(x) = 2 \sin(8x) \arcsin(x)$ ,

then  $f'(x) = \underline{\hspace{2cm}}$ .

(b) If  $g(x) = \tan^{-1}(\sin(2x))$ ,

then  $g'(x) = \underline{\hspace{2cm}}$ .

(c) If  $h(x) = \arcsin^3(2x + 6)$ ,

then  $h'(x) = \underline{\hspace{2cm}}$

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### 3. (1 pt) [alfredLibrary/AUCI/chapter6/lesson4/anti1.pg](#)

Evaluate the integral:

$$\int_0^{0.8} \frac{dx}{\sqrt{1-x^2}} = \left. \underline{\hspace{1cm}} \right|_0^{0.8} = \underline{\hspace{2cm}}$$

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### 4. (1 pt) [alfredLibrary/AUCI/chapter6/lesson4/anti2.pg](#)

Evaluate the integral:

$$\int_1^{\sqrt{6}} \frac{9}{1+x^2} dx = \left. \underline{\hspace{1cm}} \right|_1^{\sqrt{6}} = \underline{\hspace{2cm}}$$

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### 5. (1 pt) [alfredLibrary/AUCI/chapter6/review/anti1.pg](#)

Evaluate each integral without explicitly writing out the necessary substitution. In part (b), you will need to rewrite the integral by dividing each term by 5.

(a)  $\int_0^{0.1} \frac{8}{\sqrt{1-(4x)^2}} dx = \left. \underline{\hspace{1cm}} \right|_0^{0.1} = \underline{\hspace{2cm}}$

(b)  $\int_1^2 \frac{5}{5+x^2} dx = \left. \underline{\hspace{1cm}} \right|_1^2 = \underline{\hspace{2cm}}$