Calculus ex05 **8, May, 2019**

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⟵ Please encode your student number, and write your first and last names below.

First name and last name:

Questions with a ♣ may have zero, one or more right answers.

Question 1 ♣ Evaluate primitive value of $\arcsin\left(-\frac{1}{\sqrt{2}}\right)$.

◯ $-\frac{\pi}{3}$ ◯ $-\frac{7\pi}{6}$ ◯ $-\frac{5\pi}{4}$ ◯ $-\frac{2\pi}{3}$ ◯ $-\frac{3\pi}{4}$ ◯ $-\frac{\pi}{4}$
◯ $-\frac{5\pi}{6}$ ◯ $-\pi$ ◯ $-\frac{\pi}{2}$ ◯ *None of these answers are correct.*

Question 2 ♣ Evaluate primitive value of $\arccos\left(\frac{\sqrt{3}}{2}\right)$.

◯ $-\frac{\pi}{2}$ ◯ 0 ◯ $-\frac{\pi}{3}$ ◯ $-\frac{2\pi}{3}$ ◯ $-\frac{3\pi}{4}$ ◯ $\frac{\pi}{6}$ ◯ $-\frac{\pi}{6}$
◯ $-\frac{5\pi}{6}$ ◯ $-\frac{\pi}{4}$ ◯ *None of these answers are correct.*

Question 3 ♣ Evaluate primitive value of $\arctan(1)$.

◯ $\frac{\pi}{3}$ ◯ $\frac{3\pi}{4}$ ◯ $\frac{7\pi}{6}$ ◯ $\frac{5\pi}{4}$ ◯ $\frac{2\pi}{3}$ ◯ $\frac{\pi}{2}$ ◯ $\frac{5\pi}{6}$
◯ $\frac{\pi}{4}$ ◯ π ◯ *None of these answers are correct.*

Question 4 ♣
Find the derivative $f'(x)$ of $f(x) = \arcsin\left(\frac{x}{2}\right)$.

◯ $\frac{1}{\sqrt{1-\frac{x^2}{4}}}$ ◯ $\frac{1}{\sqrt{4-x^2}}$ ◯ $\frac{\arccos\left(\frac{x}{2}\right)}{2}$ ◯ $\frac{1}{2\sqrt{1-\frac{x^2}{4}}}$ ◯ $\arccos\left(\frac{x}{2}\right)$
◯ *None of these answers are correct.*

Question 5 ♣
Find the derivative $f'(x)$ of $f(x) = \arccos\left(\frac{x}{\sqrt{3}}\right)$.

◯ $-\frac{\arcsin\left(\frac{x}{\sqrt{3}}\right)}{\sqrt{3}}$ ◯ $-\frac{1}{\sqrt{1-\frac{x^2}{3}}}$ ◯ $-\frac{1}{\sqrt{3}\sqrt{1-\frac{x^2}{3}}}$ ◯ $-\arcsin\left(\frac{x}{\sqrt{3}}\right)$
◯ $-\frac{1}{\sqrt{3-x^2}}$ ◯ *None of these answers are correct.*

Question 6 ♣
Find the derivative $f'(x)$ of $f(x) = \arctan\left(\frac{x}{7}\right)$.

◯ $\frac{1}{\frac{x^2}{49}+1}$ ◯ $\frac{1}{7\cos^2\left(\frac{x}{7}\right)}$ ◯ $\frac{1}{7\left(\frac{x^2}{49}+1\right)}$ ◯ $\frac{7}{x^2+49}$ ◯ $\frac{1}{\cos^2\left(\frac{x}{7}\right)}$
◯ *None of these answers are correct.*

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Questions with a ♣ may have zero, one or more right answers.

Question 1 ♣ Evaluate primitive value of $\arcsin\left(\frac{1}{2}\right)$.

◯ $\frac{3\,\pi}{4}$ ◯ $\frac{\pi}{2}$ ◯ $\frac{5\,\pi}{6}$ ◯ $\frac{7\,\pi}{6}$ ◯ $\frac{2\,\pi}{3}$ ◯ $\frac{\pi}{6}$ ◯ π
◯ $\frac{\pi}{3}$ ◯ $\frac{\pi}{4}$ ◯ *None of these answers are correct.*

Question 2 ♣ Evaluate primitive value of $\arccos(0)$.

◯ $\frac{4\,\pi}{3}$ ◯ $\frac{7\,\pi}{6}$ ◯ $\frac{5\,\pi}{4}$ ◯ $\frac{2\,\pi}{3}$ ◯ $\frac{\pi}{2}$ ◯ π ◯ $\frac{5\,\pi}{6}$
◯ $\frac{3\,\pi}{2}$ ◯ $\frac{3\,\pi}{4}$ ◯ *None of these answers are correct.*

Question 3 ♣ Evaluate primitive value of $\arctan\left(-\frac{1}{\sqrt{3}}\right)$.

◯ $-\frac{\pi}{2}$ ◯ $-\pi$ ◯ $-\frac{7\,\pi}{6}$ ◯ $-\frac{\pi}{3}$ ◯ $-\frac{5\,\pi}{6}$ ◯ $-\frac{\pi}{4}$
◯ $-\frac{3\,\pi}{4}$ ◯ $-\frac{2\,\pi}{3}$ ◯ $-\frac{\pi}{6}$ ◯ *None of these answers are correct.*

Question 4 ♣
Find the derivative $f'(x)$ of $f(x) = \arcsin\left(\frac{x}{\sqrt{5}}\right)$.

◯ $\frac{1}{\sqrt{5}\sqrt{1-\frac{x^2}{5}}}$ ◯ $\frac{1}{\sqrt{1-\frac{x^2}{5}}}$ ◯ $\frac{\arccos\left(\frac{x}{\sqrt{5}}\right)}{\sqrt{5}}$ ◯ $\arccos\left(\frac{x}{\sqrt{5}}\right)$ ◯ $\frac{1}{\sqrt{5-x^2}}$
◯ *None of these answers are correct.*

Question 5 ♣
Find the derivative $f'(x)$ of $f(x) = \arccos\left(\frac{x}{\sqrt{7}}\right)$.

◯ $-\frac{1}{\sqrt{7}\sqrt{1-\frac{x^2}{7}}}$ ◯ $-\frac{1}{\sqrt{1-\frac{x^2}{7}}}$ ◯ $-\arcsin\left(\frac{x}{\sqrt{7}}\right)$ ◯ $-\frac{\arcsin\left(\frac{x}{\sqrt{7}}\right)}{\sqrt{7}}$
◯ $-\frac{1}{\sqrt{7-x^2}}$ ◯ *None of these answers are correct.*

Question 6 ♣
Find the derivative $f'(x)$ of $f(x) = \arctan\left(\frac{x}{3}\right)$.

◯ $\frac{1}{3\,\cos^2\left(\frac{x}{3}\right)}$ ◯ $\frac{1}{\cos^2\left(\frac{x}{3}\right)}$ ◯ $\frac{1}{\frac{x^2}{9}+1}$ ◯ $\frac{3}{x^2+9}$ ◯ $\frac{1}{3\left(\frac{x^2}{9}+1\right)}$
◯ *None of these answers are correct.*