



## 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  $\arctan(1)$ .

- ☐  $\frac{\pi}{3}$  ☐  $\frac{3\pi}{4}$  ☐  $\frac{7\pi}{6}$  ☐  $\frac{5\pi}{4}$  ☐  $\frac{2\pi}{3}$  ☐  $\frac{\pi}{2}$  ☐  $\frac{5\pi}{6}$
- ☒  $\frac{\pi}{4}$  ☐  $\pi$  ☐ 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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☐ 1 ☐ 1 ☐ 1 ☐ 1 ☐ 1 ☐ 1 ☐ 1 ☐ 1  
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**Question 1 ♣** Evaluate primitive value of  $\arcsin\left(\frac{1}{2}\right)$ .

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

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

- ☐  $\frac{4\pi}{3}$  ☐  $\frac{7\pi}{6}$  ☐  $\frac{5\pi}{4}$  ☐  $\frac{2\pi}{3}$  ☒  $\frac{\pi}{2}$  ☐  $\pi$  ☐  $\frac{5\pi}{6}$   
☐  $\frac{3\pi}{2}$  ☐  $\frac{3\pi}{4}$  ☐ 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.