Calculus ex04 **Apr. 24 2019**

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○3 ○3 ○3 ○3 ○3 ○3 ○3 ○3
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○5 ○5 ○5 ○5 ○5 ○5 ○5 ○5
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⟵ Please encode your student number, and write your first and last names below.

First name and last name

Question 1 Find the derivative $f'(x)$ of $f(x) = \left(-3\,x^2 - 5\right)^8$.

○ $-24\,x\,\left(-3\,x^2 - 5\right)^7$ ○ $48\,x\,\left(-3\,x^2 - 5\right)^7$ ○ $8\,\left(-3\,x^2 - 5\right)^7$
○ $24\,x\,\left(-3\,x^2 - 5\right)^7$ ● $-48\,x\,\left(-3\,x^2 - 5\right)^7$

Question 2 Find the derivative $f'(x)$ of $f(x) = \sqrt{x^2 - 1}$.

○ 1 ● $\frac{x}{\sqrt{x^2-1}}$ ○ $\sqrt{2x}$ ○ $\frac{2\,x}{\sqrt{x^2-1}}$ ○ $-\frac{2\,x}{\sqrt{x^2-1}}$

Question 3 Find the derivative $f'(x)$ of $f(x) = \sin\left(9\,x - 6\right)$.

● $9\,\cos\left(9\,x - 6\right)$ ○ $-9\,\cos\left(9\,x - 6\right)$ ○ $-18\,\cos\left(9\,x - 6\right)$ ○ $\cos\left(9\,x - 6\right)$
○ $18\,\cos\left(9\,x - 6\right)$

Question 4 Find the derivative $f'(x)$ of $f(x) = \tan\left(5\,x + 4\right)$.

○ $-\frac{5}{\cos^2(5\,x+4)}$ ● $\frac{5}{\cos^2(5\,x+4)}$ ○ $\frac{10}{\cos^2(5\,x+4)}$ ○ $\frac{1}{\cos^2(5\,x+4)}$
○ $-\frac{10}{\cos^2(5\,x+4)}$

Question 5 Find the derivative $f'(x)$ of $f(x) = \cos\left(8\,x\right)\sin\left(2\,x\right)$.

○ $-16\,\cos\left(2\,x\right)\sin\left(8\,x\right)$
● $2\,\cos\left(8\,x\right)\cos\left(2\,x\right) - 8\,\sin\left(8\,x\right)\sin\left(2\,x\right)$
○ $2\,\cos\left(8\,x\right)\cos\left(2\,x\right) + 8\,\sin\left(8\,x\right)\sin\left(2\,x\right)$
○ $16\,\cos\left(2\,x\right)\sin\left(8\,x\right)$
○ $-2\,\cos\left(8\,x\right)\cos\left(2\,x\right) - 8\,\sin\left(8\,x\right)\sin\left(2\,x\right)$

Question 6 Find the derivative $f'(x)$ of $f(x) = e^{(2\,x+9)}$.

○ $e^{(2\,x+9)}$ ○ $(2\,x + 9)e^{(2\,x+8)}$ ● $2\,e^{(2\,x+9)}$ ○ $(2\,x + 9)e^{(2\,x+9)}$

Question 7 Find the derivative $f'(x)$ of $f(x) = \log\left(4\,x + 7\right)$.

○ $\frac{1}{4\,x+7}$ ● $\frac{4}{4\,x+7}$ ○ $\log\left(4\,x + 7\right)$ ○ $\left(4\,x + 7\right)\log\left(4\,x + 6\right)$