Unleashing the toolbox

Latest Submission Grade 100%

1. In this assessment, you will be tested on all of the different topics you have in covered this module. Good luck!

1 / 1 point

What is the derivative of the function $f(x) = x^{3/2} + \pi x^2 + \sqrt{7}$ evaluated at the point x = 2?

$$\int f'(2) = \frac{3}{2} + 4\pi$$

$$f'(2) = \frac{3}{2} + 4\pi + \sqrt{7}$$

$$f'(2) = \frac{3\sqrt{2}}{2} + 4\pi + \sqrt{7}$$

⊘ Correct

Well done!

2. What is the derivative of the function $f(x) = x^3 cos(x)e^x$?

1/1 point

$$\int f'(x) = -x^3 \sin(x) + e^x x^3 + 3e^x x^2 \cos(x)$$

$$\int f'(x) = -3x^2 \sin(x)e^x$$

$$f'(x) = -e^{x}x^{3}sin(x) + e^{x}x^{3}cos(x) + e^{x}x^{2}cos(x)$$

⊘ Correct

Well done!

3. What is the derivative of the function $f(x) = e^{[(x+1)^2]}$?

1/1 point

$$f'(x) = e^{[(x+1)^2]}$$

$$f'(x) = (x+1)e^{[(x+1)^2]}$$

$$\int f(x) = e^{2(x+1)}$$

$$f'(x) = 2(x+1)e^{[(x+1)^2]}$$

⊘ Correct

Well done!

4. What is the derivative of the function $f(x) = x^2 cos(x^3)$?

1 / 1 point

$$\int f'(x) = 2x\sin(x^3) - 3x^4\cos(x^3)$$

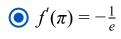
$$\int f'(x) = 2x\sin(x^3) - 3x^4\sin(x^3)$$

$$f'(x) = 2x\cos(x^3) - 3x^4\sin(x^3)$$

Well done!

- **5.** What is the derivative of the function $f(x) = \sin(x)e^{\cos(x)}$ at the point $x = \pi$?
- 1 / 1 point

 $f'(\pi) = \frac{1}{e^2}$



$$f'(\pi) = -\frac{1}{e^2}$$

$$f'(\pi) = \frac{1}{e}$$

$$f'(\pi) = \frac{1}{e}$$

⊘ Correct Well done!