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

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

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

✓ Correct

Well done!

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

- ○ $f'(x) = -e^x x^3 sin(x) + e^x x^3 cos(x) + e^x x^2 cos(x)$
- ○ $f'(x) = -x^3 sin(x) + e^x x^3 + 3e^x x^2 cos(x)$
- ⦿ $f'(x) = -e^x x^3 sin(x) + e^x x^3 cos(x) + 3e^x x^2 cos(x)$
- ○ $f'(x) = -3x^2 sin(x)e^x$

✓ Correct

Well done!

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

1 / 1 point

○ $f'(x) = e^{[(x+1)^2]}$

○ $f'(x) = (x+1)e^{[(x+1)^2]}$

◉ $f'(x) = 2(x+1)e^{[(x+1)^2]}$

○ $f'(x) = e^{2(x+1)}$

⊘ Correct

Well done!

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

1 / 1 point

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

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

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

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

⊘ Correct

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!