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!

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

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

✓ **Correct**

Well done!

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

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

✓ **Correct**

Well done!

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

1 / 1 point

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

✓ **Correct**

Well done!

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

1 / 1 point

- ( ) $f'(x) = 2xsin(x^3) - 3x^4sin(x^3)$
- ( ) $f'(x) = 2xcos(x^3) - 3x^4cos(x^3)$
- (●) $f'(x) = 2xcos(x^3) - 3x^4sin(x^3)$
- ( ) $f'(x) = 2xsin(x^3) - 3x^4cos(x^3)$

✓ **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

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

✓ **Correct**

Well done!