Unleashing the toolbox
Quiz, 5 questions

4/5 points (80%)

✓ **Congratulations! You passed!**

<div>Next Item</div>

✔ 1 / 1
point

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 $x = 2$?

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

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

Correct
Well done!

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

○ $f'(2) = \frac{3}{2} + 4\pi$

✔ 1 / 1
point

2.

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

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

Correct
Well done!

○ $f'(x) = -3x^2 sin(x) e^x$

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

Unleashing the toolbox $+ e^x x^3 + 3e^x x^2 cos(x)$

4/5 points (80%)

Quiz, 5 questions

---

1 / 1
point

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

○ $f'(x) = (x+1)e^{[(x+1)^2]}$

○ $f'(x) = e^{[(x+1)^2]}$

○ $f'(x) = e^{2(x+1)}$

◉ $f'(x) = 2(x+1)e^{[(x+1)^2]}$

  ▲

Correct
Well done!

---

0 / 1
point

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

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

  ▲

This should not be selected
Be careful when differentiating!

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

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

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

---

1 / 1
point

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

○

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

Unleashing the toolbox

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

4/5 points (80%)

Correct

Well done!

○ $f'(\pi) = \tfrac{1}{e^2}$

○ $f'(\pi) = -\tfrac{1}{e^2}$

👎 🏳

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

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

Correct

Well done!