1. Find the derivative of $x^2 \sin(\pi x)$.

- $\pi x^2 \cos(\pi x) + 2x \sin(\pi x)$
- $2\pi x \cos(\pi x)$
- $2x + \pi \cos(\pi x)$
- $2x \sin(\pi x)$

2. What is the derivative of $\frac{\sin(\pi x)}{5x^2+7x^3+x^4}$?

- $\frac{\pi \cos(\pi x)}{4x^3+21x^2+10x}$
- $(\pi (x^4+7x^3+5x^2)\cos(\pi x) - (4x^3+21x^2+10x)\sin(\pi x))/(x^4+7x^3+5x^2)^2$
- $\frac{\pi \cos(\pi x)}{x^4+7x^3+5x^2} - \frac{(4x^3+21x^2+10x)\sin(\pi x)}{(x^4+7x^3+5x^2)^2}$
- $((4x^3+21x^2+10x)\sin(\pi x) + \pi (x^4+7x^3+5x^2)\cos(\pi x))/(x^4+7x^3+5x^2)$

3. Take the derivative of $e^{7+2x^2+2x^3}$.

- $e^{2x^3+2x^2+7}(6x^2+4x)$
- $e^{2x^3+2x^2+7}$
- $e^x(6x^2+4x)$
- e^{6x^2+4x}

4. Find the derivative of $2x^4$.

- $8x$
- $8x^3$
- 4
- $10x^4$