

NOM :
Prénom :

Interrogation Écrite n°3

PTSI B Lycée Eiffel

26 novembre 2013

Dérivées

$$1. f(x) = \frac{3}{x^4} \quad f'(x) =$$

$$3. f(x) = \sin(x) \cos(2x) \quad f'(x) =$$

$$5. f(x) = \frac{\tan(2x)}{\tan(x)} \quad f'(x) =$$

$$7. f(x) = x^2 e^{\frac{1}{x}} \quad f'(x) =$$

$$9. f(x) = \tan^3(3x) \quad f'(x) =$$

$$2. f(x) = \frac{x^2 + 1}{x^2 + x + 1} \quad f'(x) =$$

$$4. f(x) = \frac{1}{\sqrt{x^2 - 1}} \quad f'(x) =$$

$$6. f(x) = \frac{1}{\sqrt{\ln(x)}} \quad f'(x) =$$

$$8. f(x) = \arctan(\sqrt{x^3 + 1}) \quad f'(x) =$$

$$10. f(x) = \int_x^{x^2} \frac{e^t}{t} dt \quad f'(x) =$$

Intégrales

$$1. \int_0^{\ln(2)} e^{3x-2} dx$$

$$2. \int_0^1 \frac{1}{x^2} + \frac{1}{x} dx$$

$$3. \int_0^\pi \cos^3(x) dx$$

$$4. \int_0^1 x \ln(x) dx$$

$$5. \int_2^3 \frac{x^2}{x^3 - 1} dx$$

$$6. \int_0^{\frac{\pi}{4}} \frac{x}{\cos^2(x)} dx$$

$$7. \int_0^4 \frac{1}{1 + \sqrt{x}} dx$$

$$8. \int_0^1 \frac{x}{1 + x^2} dx$$

$$9. \int_0^{\sqrt{\frac{\pi}{3}}} x \cos(x^2) dx$$

$$10. \int_0^2 \frac{x}{x^2 + 3x + 2} dx$$