Dérivées - Exercices mixtes (1)

Calculer les dérivées :☞ **ici** les réponses

$$f(x) = \frac{a+x}{\sqrt{a-x}}$$
$$f(x) = \sqrt{x - \sqrt{a^2 - x^2}}$$
$$f(x) = \frac{x}{x + \sqrt{1-x^2}}$$
$$f(x) = \frac{x^3}{\sqrt{(1-x^2)^3}}$$
$$f(x) = \frac{a^4}{2\sqrt{a^2x^2 - x^4}}$$
$$f(x) = \frac{\sqrt{x^2+1} - x}{\sqrt{x^2+1} + x}$$
$$f(x) = \sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}}$$
$$f(x) = \frac{\sqrt{1+x} + \sqrt{1-x}}{\sqrt{1+x} - \sqrt{1-x}}$$
$$f(x) = \sqrt[3]{x}\sqrt{\sqrt{x}+1}$$
$$f(x) = \sqrt[4]{[a - \frac{b}{\sqrt{x} + \sqrt[3]{(c^2-x^2)^2}}]^3}$$
$$f(x) = \frac{\sqrt{1+x^2} + \sqrt{1-x^2}}{\sqrt{1+x^2} - \sqrt{1-x^2}}$$
$$f(x) = ln\frac{x}{\sqrt{1+x^2}}$$
$$f(x) = ln\frac{\sqrt{1+x} + \sqrt{1-x}}{\sqrt{1+x} - \sqrt{1-x}}$$
$$f(x) = ln\frac{x}{\sqrt{x^2+a^2} - x}$$
$$f(x) = ln[\sqrt{1+x^2} + \sqrt{1-x^2}]$$

Réponses :

$$f'(x) = (\frac{a+x}{\sqrt{a-x}})' = \frac{3a-x}{2(a-x)^{\frac{3}{2}}}$$
$$f'(x) = (\sqrt{x-\sqrt{a^2-x^2}})' = \frac{(x+\sqrt{a^2-x^2})}{2\sqrt{a^2-x^2}(x-\sqrt{a^2-x^2})^{\frac{1}{2}})}$$
$$f'(x) = (\frac{x}{x+\sqrt{1-x^2}})' = \frac{1}{2x(1-x^2)+\sqrt{1-x^2}}$$
$$f'(x) = (\frac{x^3}{\sqrt{(1-x^2)^3}})' = \frac{3x^2}{(1-x^2)^{\frac{5}{2}}}$$
$$f'(x) = (\frac{a^4}{2\sqrt{a^2x^2-x^4}})' = \frac{-a^4(a^2-2x^2)}{2x^2(a^2-x^2)^{\frac{3}{2}}}$$
$$f'(x) = (\frac{\sqrt{x^2+1}-x}{\sqrt{x^2+1}+x})' = 2(2x-\frac{2x^2+1}{\sqrt{x^2+1}})$$
$$f'(x) = (\sqrt{\frac{1-\sqrt{x}}{1+\sqrt{x}}})' = -\frac{1}{2(1+\sqrt{x})\sqrt{x-x^2}}$$
$$f'(x) = (\frac{\sqrt{1+x}+\sqrt{1-x}}{\sqrt{1+x}-\sqrt{1-x}})' =$$
$$f'(x) = (\sqrt[3]{x}\sqrt{\sqrt{x}+1})' = -\frac{1+\sqrt{1-x^2}}{x^2\sqrt{1-x^2}}$$
$$f'(x) = (\frac{\sqrt{1+x^2}+\sqrt{1-x^2}}{\sqrt{1+x^2}-\sqrt{1-x^2}})' =$$
$$f'(x) = (ln\frac{x}{\sqrt{1+x^2}})' = \frac{7\sqrt{x}+4}{12\sqrt[3]{x^2}\sqrt{\sqrt{x}+1}}$$
$$f'(x) = (ln\frac{\sqrt{1+x}+\sqrt{1-x}}{\sqrt{1+x}-\sqrt{1-x}})' = \frac{\frac{3b}{2x\sqrt{x}}-\frac{4x}{\sqrt[3]{(c^2-x^2)}}}{4\sqrt[4]{a-\frac{b}{\sqrt{x}}+\sqrt[3]{(c^2-x^2)^2}}}$$
$$f'(x) = (ln\frac{x}{\sqrt{x^2+a^2}-x})' = -\frac{2}{x^3}(1+\frac{1}{\sqrt{1-x^4}})$$
$$f'(x) = (ln[\sqrt{1+x^2}+\sqrt{1-x^2}])' = \frac{1}{x(1+x^2)}$$

☞ **Retour**