

Déterminer le domaine de définition des fonctions suivantes:

1) $f(x) = -\text{Arcsin}(3 - x^2)$

2) $f(x) = \text{Arctg}\left(\frac{1}{x-2}\right)$

3) $f(x) = \text{Arccos}(x^2 - 2x)$

4) $f(x) = \frac{2}{\text{Arcsin}(3x)}$

5) $f(x) = \frac{\text{Arccos}(2x)}{\text{Arctg}\left(\frac{x}{2}\right)}$

6) $f(x) = \text{Arcsin}(-x^2 - 2x + 1)$

7) $f(x) = \text{Arcsin}(2 - 5x)$

8) $f(x) = \text{Arccos}\left(\frac{1}{x}\right)$

9) $f(x) = \text{Arcsin}(3x) - \text{Arccos}(2x)$

10) $f(x) = -\text{Arctg}(3x - 6x^2)$

■ Solutions

1) $[-2, -\sqrt{2}] \cup [\sqrt{2}, 2]$

2) $\mathbb{R} \setminus \{2\}$

3) $[1 - \sqrt{2}, 1 + \sqrt{2}]$

4) $[-\frac{1}{3}, 0[\cup]0, \frac{1}{3}]$

5) $[-\frac{1}{2}, 0[\cup]0, \frac{1}{2}]$

6) $[-1 - \sqrt{3}, -2] \cup [0, -1 + \sqrt{3}]$

7) $[\frac{1}{5}, \frac{3}{5}]$

8) $\leftarrow, -1] \cup [1, \rightarrow$

9) $[-\frac{1}{3}, \frac{1}{3}]$

10) $\mathbb{R}$

1) $f(x) = \text{Arcsin}(5x)$

2) $f(x) = \text{Arctg}(6x + 3)$

3) $f(x) = \text{Arccos}(x - 2)$

4) $f(x) = \frac{2}{\text{Arcsin}(3x)}$

5) $f(x) = \text{Arctg}\left(\frac{x}{2}\right)$

6) $f(x) = \text{Arcsin}(1 - 2x)$

7) $f(x) = -\text{Arcsin}(3 - x^2)$

8) $f(x) = \text{Arccos}\left(\frac{1}{x}\right)$

9) $f(x) = \text{Arcsin}^2(x)$

10) $f(x) = \text{Arctg}(\sqrt{x})$

■ Solutions

1) $\frac{5}{\sqrt{1 - 25x^2}}$

2) $\frac{3}{18x^2 + 18x + 5}$

3) $-\frac{1}{\sqrt{-x^2 + 4x - 3}}$

4) $-\frac{6}{\sqrt{1 - 9x^2} \text{Arcsin}^2(3x)}$

5) $\frac{2}{x^2 + 4}$

6) $-\frac{1}{\sqrt{-(x-1)x}}$

7) $\frac{2x}{\sqrt{-x^4 + 6x^2 - 8}}$

8) $\frac{1}{x^2 \sqrt{\frac{x^2-1}{x^2}}}$

9) $\frac{2 \text{Arcsin}(x)}{\sqrt{1 - x^2}}$

10) $\frac{1}{2\sqrt{x}(x+1)}$