

On demande ensemble de dérivabilité et dérivées des 43 fonctions suivantes....

32.  $f(x) = -\sqrt{x} + \frac{x^2}{2}$

33.  $f(t) = \frac{4t^5}{5}$

34.  $f(t) = \frac{x^3 + 12x - 1}{4}$

35.  $f(u) = (2u+3)(5u+1)$

36.  $f(x) = (7x-2)^2$

37.  $f(x) = (\sqrt{x}+1)^2$

38.  $f(x) = x + \sin x$

39.  $f(t) = t \sin t$

40.  $f(x) = -2 \cos x + x^2$

43.  $f(x) = \frac{-4}{x^3}$

44.  $f(x) = \frac{2}{3x-5}$

45.  $f(x) = \frac{1-2x}{x-2}$

46.  $f(x) = \frac{4x+7}{x^2}$

47.  $f(x) = \frac{2-x^2}{2+x^2}$

48.  $f(x) = \frac{1}{\sqrt{x}}$

49.  $f(x) = \frac{2}{5x} - \frac{3x}{4}$

50.  $f(x) = \frac{1}{(2x-1)^2}$

51.  $f(x) = \frac{x^2 - 4x + 8}{2x-5}$

52.  $f(x) = 4x-1 + \frac{1}{4-x}$

53.  $f(x) = \frac{1}{x^2} \sin x$

54.  $f(x) = \frac{1}{\cos x}$

58.  $f(x) = \sqrt{x-4}$

59.  $f(t) = t + \sqrt{2t}$

60.  $f(t) = \cos\left(2t + \frac{\pi}{3}\right)$

61.  $f(x) = \frac{1}{\sqrt{2x-3}}$

62.  $f(x) = (-2x+3)^4$

63.  $f(x) = \sin 3x$

64.  $f(x) = \left(\frac{5x-4}{2}\right)^3$

101.  $f(x) = x+1 - \frac{2x}{x+3}$

102.  $f(x) = \left(\frac{x-3}{x-2}\right)^2$

103.  $f(x) = x^4 + x^2 + 1$

104.  $f(x) = 2x^4 - 3x^3 + \frac{1}{2}x + 3$

105.  $f(x) = x + \frac{2}{x} - 1$

106.  $f(x) = \frac{x^2 + x - 1}{x^2 + x + 1}$

107.  $f(x) = \frac{x^2 + 2x + 6}{x - 1}$

108.  $f(x) = \frac{2x^2 - x}{(x+1)^2}$

109.  $f(x) = \frac{x^2 + 3x + 2}{x^2 - 5x + 6}$

110.  $f(x) = x^2 + 1 - \frac{2x}{x+3}$

111.  $f(x) = \sqrt{x-1} \sqrt{3-x}$

112.  $f(x) = x\sqrt{x}$

113.  $f(x) = (\sqrt{x} + 1)^3$

114.  $f(x) = \frac{1}{\sqrt{x}}$

115.  $f(x) = \frac{x-1}{x+3} \sqrt{x}$

Solutions :

32.  $f'(x) = \frac{-1}{2\sqrt{x}} + x \quad D = ]0, +\infty[$

33.  $f'(t) = 4t^4 \quad D = \mathbb{R}$

34.  $f'(x) = \frac{3x^2 + 12}{4} \quad D = \mathbb{R}$

35.  $f'(u) = 20u + 17 \quad D = \mathbb{R}$

36.  $f'(x) = 14(7x - 2) \quad D = \mathbb{R}$

37.  $f'(x) = \frac{\sqrt{x} + 1}{\sqrt{x}} \quad D = ]0, +\infty[$

38.  $f'(x) = 1 + \cos x \quad D = \mathbb{R}$

39.  $f'(t) = \sin t + t \cos t \quad D = \mathbb{R}$

40.  $f'(x) = 2 \sin x + 2x \quad D = \mathbb{R}$

43.  $f'(x) = \frac{12}{x^4} \quad D = \mathbb{R} \setminus \{0\}$

44.  $f'(x) = \frac{-6}{(3x-5)^2} \quad D = \mathbb{R} \setminus \left\{ \frac{5}{3} \right\}$

45.  $f'(x) = \frac{3}{(x-2)^2} \quad D = \mathbb{R} \setminus \{2\}$

46.  $f'(x) = \frac{-4x-14}{x^3} \quad D = \mathbb{R} \setminus \{0\}$

47.  $f'(x) = \frac{-8x}{(x^2+2)^2} \quad D = \mathbb{R}$

48.  $f'(x) = \frac{-1}{2\sqrt{x^3}} \quad D = ]0, +\infty[$

49.  $f'(x) = \frac{-2}{5x^2} - \frac{3}{4} \quad D = \mathbb{R} \setminus \{0\}$

50.  $f'(x) = \frac{-4}{(2x-1)^3} \quad D = \mathbb{R} \setminus \left\{ \frac{1}{2} \right\}$

51.  $f'(x) = \frac{2x^2 - 10x + 4}{(2x-5)^2} \quad D = \mathbb{R} \setminus \left\{ \frac{5}{2} \right\}$

52.  $f'(x) = 4 + \frac{1}{(4-x)^2} \quad D = \mathbb{R} \setminus \{4\}$

53.  $f'(x) = \frac{x \cos x - 2 \sin x}{x^3} \quad D = \mathbb{R} \setminus \{0\}$

54.  $f'(x) = \frac{\sin x}{\cos^2 x} \quad D = \mathbb{R} \setminus \{k\pi, k \in \mathbb{Z}\}$

58.  $f'(x) = \frac{1}{2\sqrt{x-4}} \quad D = ]4, +\infty[$

59.  $f'(t) = 1 + \frac{1}{\sqrt{2t}} \quad D = ]0, +\infty[$

60.  $f'(t) = -2 \sin(2t + \frac{\pi}{3}) \quad D = \mathbb{R}$

61.  $f'(t) = \frac{-1}{\sqrt{(2x-3)^3}} \quad D = \left] \frac{3}{2}, +\infty \right[$

62.  $f'(x) = -8(-2x+3)^3 \quad D = \mathbb{R}$

63.  $f'(x) = 3 \cos 3x \quad D = \mathbb{R}$

64.  $f'(x) = \frac{15}{2} \left( \frac{5x-4}{2} \right)^2 \quad D = \mathbb{R}$

101.  $f'(x) = 1 - \frac{6}{(x+3)^2} \quad D = \mathbb{R} \setminus \{-3\}$

102.  $f'(x) = 2 \frac{(x-3)}{(x-2)^3} \quad D = \mathbb{R} \setminus \{2\}$

103.  $f'(x) = 4x^3 + 2x \quad D = \mathbb{R}$

104.  $f'(x) = 8x^3 - 9x^2 + x \quad D = \mathbb{R}$

105.  $f'(x) = 1 + \frac{-2}{x^2} \quad D = \mathbb{R} \setminus \{0\}$

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

107.  $f'(x) = \frac{x^2 - 2x - 8}{(x-1)^2} \quad D = \mathbb{R} \setminus \{1\}$

108.  $f'(x) = \frac{5x-1}{(x+1)^3} \quad D = \mathbb{R} \setminus \{-1\}$

109.  $f'(x) = \frac{-8x^2 + 8x + 28}{(x^2 - 5x + 6)^2} \quad D = \mathbb{R} \setminus \{2; 3\}$

110.  $f'(x) = 2x - \frac{6}{(x+3)^2} \quad D = \mathbb{R} \setminus \{-3\}$

111.  $f'(x) = \frac{-2x+4}{2\sqrt{x-1}\sqrt{3-x}} \quad D = ]1; 3[$

112.  $f'(x) = \frac{3}{2}\sqrt{x} \quad D = ]0, +\infty[$

113.  $f'(x) = \frac{3(\sqrt{x}+1)^2}{2\sqrt{x}} \quad D = ]0, +\infty[$

114.  $f'(x) = \frac{-1}{2\sqrt{x^3}} \quad D = ]0, +\infty[$

115.  $f'(x) = \frac{x^2 + 10x - 3}{2\sqrt{x}(x+3)^2} \quad D = ]0, +\infty[$

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