Exercice 7 p227

1) $(x+3)' = 1$

2) $(4x)' = 4$

3) $\left(\frac{x}{3} - 1\right)' = \frac{1}{3}$

4) $(x^3 - 5x)' = 3x^2 - 5$

5) $\left[(x+1)(2x-3)\right]' = 4x - 1$

6) $\left[(3x^3 - 5x + 2)\left(\frac{x}{2} - 5\right)\right]' = 6x^3 - 45x^2 - 5x + 26$

7) $\left[(x^4+1)(2x^2-3)\right]' = 4x(3x^4 - 3x^2 + 1)$

8) $\left(\frac{1}{x^2}\right)' = \frac{-2}{x^3}$

9) $\left(4x^{-3}\right)' = -12x^{-4}$

10) $\left(\sqrt[3]{x}\right)' = \frac{1}{3\sqrt[3]{x^2}}$

11) $\left(\frac{1}{\sqrt[3]{x^2}}\right)' = \frac{-2}{3\sqrt[3]{x^5}}$

12) $\left(\frac{1}{\sqrt{x}}\right)' = \frac{-1}{2\sqrt{x^3}}$

13) $\left(\sqrt[5]{x^2}\right)' = \frac{2}{5\sqrt[5]{x^3}}$

14) $\left(\frac{2x-1}{x+3}\right)' = \frac{7}{(x+3)^2}$

15) $\left(\frac{3x}{1-x^2}\right)' = \frac{3(x^2+1)}{(1-x^2)^2}$

16) $\left(\frac{5-2x}{3x-1}\right)' = \frac{-13}{(3x-1)^2}$

17) $\left(\frac{5x+3}{x^2}\right)' = \frac{-(5x+6)}{x^3}$

18) $\left(\frac{x^2-x+2}{2x^2-5x+3}\right)' = \frac{-3x^2-2x+7}{(2x^2-5x+3)^2}$

19) $\left(\frac{1}{x^2+x-2}\right)' = \frac{-(2x+1)}{(x^2+x-2)^2}$

20) $\left(\frac{1}{(x-3)(x+2)}\right)' = \frac{-2x+1}{(x-3)^2(x+2)^2}$

21) $\left(\frac{(x+2)(2x-1)}{x+3}\right)' = \frac{2x^2+12x+11}{(x+3)^2}$

22) $\left(\frac{x-1}{(x+2)(3x+1)}\right)' = \frac{3(-x^2+2x+3)}{(x+2)^2(3x+1)^2}$

23) $\left(\frac{2x+1}{\sqrt{x}}\right)' = \frac{2x-1}{2\sqrt{x^3}}$

24) $\left[\sqrt[3]{x}\cdot(3x-2)\right]' = \frac{2((6x-1)}{3\sqrt[3]{x^2}}$

Exercice 8 p 228

1) $\left((2x+1)^3\right)' = 6(2x+1)^2$

2) $\left(\sqrt{3x+2}\right)' = \dfrac{3}{2\sqrt{3x+2}}$

3) $\left(\dfrac{1}{(x+5)^3}\right)' = \dfrac{-3}{(x+5)^4}$

4) $\left(\sqrt[3]{(x^2-x+3)^2}\right)' = \dfrac{2(2x-1)}{3\sqrt[3]{x^2-x+3}}$

5) $\left(\dfrac{1}{\sqrt{2x-1}}\right)' = \dfrac{-1}{\sqrt{(2x-1)^3}}$

6) $\left(\dfrac{5}{(2x+3)^3}\right)' = \dfrac{-30}{(2x+3)^3}$

7) $\left(\dfrac{1}{\sqrt[3]{5x^2}}\right)' = \dfrac{-2}{3\sqrt[3]{5x^5}}$

8) $\left(\dfrac{1}{\sqrt{4x^2-1}}\right)' = \dfrac{-4x}{\sqrt{(4x^2-1)^3}}$

9) $\left(\sqrt{(3x^2-1)^3}\right)' = 9x\sqrt{3x^2-1}$

10) $\left((4x^2-2x+3)^2\right)' = 4(4x^2-2x+3)(4x-1)$

Exercice 9 p 228

1) $\left[(x-2)^2(3x+1)\right]' = (x-2)(9x-4)$

2) $\left[(2x-1)^3(3x+2)^2\right]' = 6(2x-1)^2(3x+2)(5x+1)$

3) $\left(\dfrac{(3x+2)^2}{x-1}\right)' = \dfrac{(3x+2)(3x-8)}{(x-1)^2}$

4) $\left(\dfrac{4x-2}{(x+1)^3}\right)' = \dfrac{2(-4x+5)}{(x+1)^4}$

5) $\left[\dfrac{(2x-1)^2}{(2x+3)^3}\right]' = \dfrac{2(2x-1)(-2x+9)}{(2x+3)^4}$

6) $\left[(x+2)\sqrt{x^2+3}\right]' = \dfrac{2x^2+2x+3}{\sqrt{x^2+3}}$

7) $\left(\dfrac{\sqrt{x^2-1}}{2x+1}\right)' = \dfrac{x+2}{(2x+1)^2\sqrt{x^2-1}}$

8) $\left(\dfrac{2x-1}{\sqrt{3x+5}}\right)' = \dfrac{6x+23}{2\sqrt{(3x+5)^3}}$

9) $\left(\dfrac{(3x+1)^2}{\sqrt{x-2}}\right)' = \dfrac{(3x+1)(9x-25)}{2\sqrt{(x-2)^3}}$

10) $\left(\dfrac{\sqrt{x^2+1}}{\sqrt{2-x}}\right)' = \dfrac{-x^2+4x+1}{2\sqrt{x^2+1}\sqrt{(2-x)^3}}$

11) $\sqrt{\dfrac{x^2+1}{2-x}}' = \dfrac{-x^2+4x+1}{2\sqrt{(x^2+1)(2-x)^3}}$

12) $\left(\dfrac{2}{x}+x^2\right)^3{}' = 3\left(\dfrac{2}{x}+x^2\right)^2\left(\dfrac{-2}{x^2}+2x\right)$

13) $\left[3x^2(2x^3+1)^3\right]' = 6x(2x^3+1)^2(11x^3+1)$

14) $\left[3x^2(2x^3+1)\right]^3{}' = 162x^5(2x^3+1)^2(5x^3+1)$