Quelques indications pour certaines questions...

7) $\int \sqrt{x}\,dx = \int x^{\frac{1}{2}}\,dx$

$\int x^n dx = \frac{1}{n+1} x^{n+1} + C$ avec $n \in \mathbb{R}$, $n \neq -1$

8) $\int \sqrt[3]{x}\,dx = \int x^{\frac{1}{3}}\,dx$

9) $\int \frac{1}{x^2}\,dx = \int x^{-2}\,dx$

10) $\int \frac{3}{x^5}\,dx = 3\int x^{-5}\,dx$

11) $\int \frac{1}{\sqrt{x}}\,dx = \int \frac{1}{x^{\frac{1}{2}}}\,dx = \int x^{-\frac{1}{2}}\,dx$

12) $\int \frac{1}{\sqrt[3]{x}}\,dx = \int \frac{1}{x^{\frac{1}{3}}}\,dx = \int x^{-\frac{1}{3}}\,dx$

13) $\int (1+\tan^2 x)\,dx = \tan x + C$

Car $(\tan x)' = \left(\frac{\sin x}{\cos x}\right)' = \frac{\cos x \cos x - \sin x(-\sin x)}{\cos^2 x}$

$= \frac{\cos^2 x + \sin^2 x}{\cos^2 x} = \frac{\cos^2 x}{\cos^2 x} + \frac{\sin^2 x}{\cos^2 x}$

$= 1 + \left(\frac{\sin x}{\cos x}\right)^2 = 1 + \tan^2 x$

14) Vu que $\int (1+\tan^2 x)\,dx = \tan x + C$

$\int 1\,dx + \int \tan^2 x\,dx = \tan x + C$

$$x + \int \tan^2 x \, dx = \tan x + C$$

$$\int \tan^2 x \, dx = \tan x - x + C$$