ex. 11

a. $\int \frac{1}{\sqrt[3]{x^2}}\,dx = \int x^{-2/3}\,dx = \frac{x^{1/3}}{1/3} + c$

$= 3x^{1/3} + c$

$= 3\sqrt[3]{x} + c$

b. $\int \sec x\,dx \Rightarrow$ not possible

c. $\int \frac{2x}{x^2+1}\,dx = \ln|x^2+1| + c$

Cor. 1.2 $\int \frac{f'(x)}{f(x)}\,dx = \ln|f(x)| + c$

d. $\int \frac{x^3+1}{x}\,dx = \int (x^2 + \frac{1}{x})\,dx = \int x^2\,dx + \int \overset{x^{-1}}{\frac{1}{x}}\,dx$

$= \frac{x^3}{3} + \ln|x| + c$

$= \frac{1}{3}x^3 + \ln|x| + c$

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e. $\int (x+1)(x-1)\,dx = \int (x^2-1)\,dx = \int x^2\,dx - \int 1\,dx$

$= \frac{1}{3}x^3 - x + c$

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f. $\int x \sin 2x\,dx \Rightarrow$ not possible

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5-31 odd, 39-49 odd, 63, 65