(23) $\int \frac{e^x}{1+e^x}dx$

Let $u = 1+e^x \Rightarrow du = e^x dx$

$\therefore \int \frac{e^x}{1+e^x}dx = \int \frac{du}{u} = \ln|u| + C = \ln|1+e^x| + C$

Since $1+e^x$ will never be zero you can replace the absolute value signs with parenthesis.

$\therefore \ln|1+e^x| + C = \ln(1+e^x) + C$

(25) $\int (1+2x^2)^2 dx = \int (1+4x^2+4x^4)dx = \int dx + 4\int x^2 + 4\int x^4 dx$

$= x + \frac{4}{3}x^3 + \frac{4}{5}x^5 + C = \frac{x}{15}(12x^4 + 20x^2 + 15) + C$

(27) $\int x\cos(2\pi x^2)dx$

Let $u = 2\pi x^2 \Rightarrow du = 4\pi x$

$\therefore \int x\cos(2\pi x^2)dx = \frac{1}{4\pi}\int \cos u du = \frac{1}{4\pi}\sin u + C = \frac{1}{4\pi}\sin(2\pi x^2) + C$

(29) $\int \csc\pi x \cot\pi x dx = \int \left(\frac{1}{\sin\pi x}\right)\left(\frac{\cos\pi x}{\sin\pi x}\right)dx = \int \frac{\cos\pi x}{(\sin\pi x)^2}dx$

Let $u = \sin\pi x \Rightarrow du = \pi\cos\pi x dx$

$\therefore \int \frac{\cos\pi x}{(\sin\pi x)^2}dx = \frac{1}{\pi}\int \frac{du}{u^2} = \frac{1}{\pi}\frac{-1}{u} + C = -\frac{1}{\pi}\left(\frac{1}{\sin\pi x}\right) + C = -\frac{1}{\pi}\csc\pi x + C$

(31) $\int e^{5x}dx$

Let $u = 5x \Rightarrow du = 5dx$

$\therefore \int e^{5x}dx = \frac{1}{5}\int e^u du = \frac{1}{5}e^u + C = \frac{1}{5}e^{5x} + C$

(33) $\int \frac{2}{(e^{-x}+1)}dx$

Because $\frac{1}{e^{-x}+1} = \frac{1}{\left(\frac{1}{e^x}+1\right)} = \frac{1}{\left(\frac{1}{e^x}(1+e^x)\right)} = \frac{e^x}{(1+e^x)}$

$\int \frac{2}{(e^{-x}+1)}dx = 2\int \frac{e^x}{(1+e^x)}dx$

See Chapter 7 Section 1 # 23 on how to do this integral