Opgave 3:

$$\int_0^{\frac{\pi}{2}} e^{ax} + \sin(bx)\,dx = \left[\frac{e^{ax}}{a} - \frac{\cos(bx)}{b}\right]_0^{\frac{\pi}{2}}$$

$$= \left(\frac{e^{\frac{a\pi}{2}}}{a} - \frac{\cos(\frac{b\pi}{2})}{b} - \left(\frac{e^0}{a} - \frac{\cos(0)}{b}\right)\right)$$

$$= \frac{e^{\frac{a\pi}{2}}}{a} - \frac{\cos(\frac{b\pi}{2})}{b} - \frac{1}{a} + \frac{1}{b}$$

$$= \frac{e^{\frac{a\pi}{2}} - 1}{a} - \frac{\cos(\frac{b\pi}{2}) + 1}{b}$$