

Quiz 19

$$1. \int x^3 - \cos x \, dx = \frac{1}{4} x^4 - \sin x + C$$

$$2. \int \frac{4}{\sqrt{x}} - 5e^{2x} \, dx = \int 4x^{-1/2} - 5e^{2x} \, dx =$$
$$8x^{1/2} - \frac{5}{2} e^{2x} + C$$

$$3. f' = x^4 + 7e^x \Rightarrow f = \int x^4 + 7e^x \, dx =$$

$$\frac{1}{5} x^5 + 7e^x + C.$$

$$4 = f(0) = 7 + C \Rightarrow C = -3$$

$$\therefore f(x) = \frac{1}{5} x^5 + 7e^x - 3.$$