

Worksheet for 21 November

Part I (go onto Part II if you finish)

$$\textcircled{1} \int_2^9 \frac{1}{\sqrt{x+7}} dx$$

$$\textcircled{2} \int_0^4 x \cdot e^{x^2} dx$$

$$\textcircled{3} \int_{\pi/6}^{\pi/3} \sin^3 x \cos x dx$$

$$\textcircled{4} \int_0^{\pi/4} \tan x dx$$

Part II

$$\textcircled{1} \int_0^{\pi} \frac{e^x + \cos x}{e^x + \sin x} dx$$

$$\textcircled{2} \int x \sqrt{x+1} dx$$

$$\textcircled{3} \int x^3 (x^2+1)^{21} dx$$

$$\textcircled{4} \int_{\ln 2}^{\ln 3} \frac{e^{2x}}{e^x + 1} dx$$

$$\textcircled{5} \int \frac{1}{x[(\ln x)^2 + 4(\ln x + 4)]} dx$$

$$\textcircled{6} \int \frac{1}{4+x^2} dx$$

$$\textcircled{7} \int \cos^3 x \sin^2 x dx$$

Challenges (for the intrepid)

$$\textcircled{8} \int \cos(\sqrt{x}) dx$$

$$\textcircled{9} \int \sec^4 x dx$$

$$\textcircled{10} \int \frac{(1+x^2)e^x}{x^2 \cdot e^{1/x}} dx$$