M145 Worksheet # 2 Thurs, Jan 5, 2006

(1) $\int x^{\frac{2}{5}}\,dx =$

(2) $\int \dfrac{x^4 + x^2 + 1 + x^{-1}}{\sqrt{x}}\,dx =$

(3) $\int \dfrac{1}{x+1}\,dx =$

(4) $\int e^{-\frac{x}{2}}\,dx =$

(5) $\int_1^2 (x^2 - 2x + 1)\,dx =$

(6) $\int_2^5 \dfrac{dx}{x} =$

(7) Solve $y' = 3x^2 + \dfrac{1}{x}$ with $y(1) = 5$

(8) Solve $y' = e^{2x}$ with $y(0) = 10$

(9) Calculate the area under the curve $y = \dfrac{1}{x^2}$ from $x = 1$ to $x = 2$.

(10) Calculate the area under the curve $y = \sin(x)$ from $x = 0$ to $x = \pi$.