

1. $\int_0^1 \frac{x}{x^2+1} dx$	2. $\int_0^{\frac{\pi}{2}} \cos^2 x \sin x dx$
3. $\int_1^2 (3x-2)^3 dx$	4. $\int_{-1}^0 e^{-x} dx$
5. $\int_1^3 \frac{6x-2}{x} dx$	6. $\lim_{x \rightarrow 5} \frac{2x^2 - 9x - 5}{x - 5}$
7. $f'(x) = 3x^2 + 4$ and $f(2) = 14$, find $f(1)$	8. $\int \frac{1}{\sqrt{16-x^2}} dx$
9. $\int_0^1 x^2(15-4x) dx$	10. Find $\frac{dy}{dx}$ for $3y^2 - 4x = 7xy$

Answers:

1) $\ln \sqrt{2}$	2) $\frac{1}{3}$	3) $\frac{85}{4}$	4) $e-1$
5) $12 - \ln 9$	6) 11	7) 3	8) $\arcsin\left(\frac{x}{4}\right) + C$
9) 4	10) $\frac{dy}{dx} = \frac{4+7y}{6y-7x}$		