19) $\int (x^3 + \sqrt{x})\,dx$

$\int (x^3 + x^{1/2})\,dx$

$\int x^3\,dx + \int x^{1/2}\,dx$

$\frac{x^4}{4} + \frac{x^{3/2}}{3/2} + C$

$\frac{x^4}{4} + \frac{2x^{3/2}}{3} + C$

- $f(x) = \frac{x^4}{4} + \frac{2x^{3/2}}{3} + C$
  $= \frac{4x^3}{4} + \frac{6x^{1/2}}{6} + 0$
  $= x^3 + x^{1/2}$
  $= x^3 + \sqrt{x}$ //

20) $\int (x^5 - 2x^3)\,dx$

$\int x^5\,dx - \int 2x^3\,dx$

$\int x^5\,dx - 2\int x^3\,dx$

$\frac{x^6}{6} - \frac{2x^4}{4} + C$

$\frac{x^6}{6} - \frac{x^4}{2} + C$

- $f(x) = \frac{x^6}{6} - \frac{x^4}{2} + C$
  $= \frac{d}{dx}\frac{x^6}{6} - \frac{d}{dx}\frac{x^4}{2} + C$
  $= \frac{6x^5}{6} - \frac{2\cdot 4x^3}{2} + 0$
  $= x^5 - 2x^3$ //

21) $\int (2 + 3x^2 - 8x^3)\,dx$

$\int 2\,dx + \int 3x^2\,dx - \int 8x^3\,dx$

$2\int dx + 3\int x^2\,dx - 8\int x^3\,dx$

$2x + \frac{3x^3}{3} - \frac{2\,8x^4}{4_1} + C$

$2x + x^3 - 2x^4 + C$

- $f(x) = 2x + x^3 - 2x^4 + c$
  $= \frac{d}{dx}2x + \frac{d}{dx}x^3 - \frac{d}{dx}2x^4$
  $= 2 + 3x^2 - 8x^3$ //

22) $\int (8x^4 + 4x^3 - 6x^2 - 4x + 5)\,dx$

$\int 8x^4\,dx + \int 4x^3\,dx - \int 6x^2\,dx - \int 4x\,dx + \int 5\,dx$

$8\int x^4\,dx + 4\int x^3\,dx - 6\int x^2\,dx - 4\int x\,dx + 5\int dx$

$\frac{8x^5}{5} + \frac{4x^4}{4} - \frac{6x^3}{3} - \frac{4x^2}{2} + 5x + C$

$\frac{8x^5}{5} + x^4 - 2x^3 - 2x^2 + 5x + C$

- $f(x) = \frac{8x^5}{5} + x^4 - 2x^3 - 2x^2 + 5x + C$
  $= \frac{40x^4}{8} + 4x^3 - 6x^2 - 4x + 5 + 0$
  $= 8x^4 + 4x^3 - 6x^2 - 4x + 5$ //