CHAPTER 2
Methods of integration

Definite integrals (1)

QUESTION 1   Find the value of:

a $\displaystyle\int_0^2 x^2\,dx$

b $\displaystyle\int_1^4 3x^2\,dx$

c $\displaystyle\int_2^5 8x\,dx$

d $\displaystyle\int_2^6 5x^4\,dx$

e $\displaystyle\int_{-3}^3 x^3\,dx$

f $\displaystyle\int_0^3 \frac{x}{3}\,dx$

g $\displaystyle\int_{-1}^2 3x^3\,dx$

h $\displaystyle\int_{-4}^{-3} 7x^6\,dx$

i $\displaystyle\int_2^3 -4x^2\,dx$

j $\displaystyle\int_2^7 (4x-5)\,dx$

k $\displaystyle\int_1^5 (8x^3 - 6x^2 + x)\,dx$

Methods of integration

Definite integrals (2)

QUESTION **1**   Evaluate:

a $\displaystyle\int_{-1}^{2} (x^2 + 6x + 4)\,dx$

b $\displaystyle\int_{-1}^{1} (8x - 3x^3)\,dx$

c $\displaystyle\int_{1}^{3} (5x + 2)^2\,dx$

d $\displaystyle\int_{4}^{5} (3 - 2x)^4\,dx$

e $\displaystyle\int_{-2}^{3} (9x - 3)^3\,dx$

f $\displaystyle\int_{0}^{1} (4x + 1)^9\,dx$

QUESTION **2**   Find the exact value of:

a $\displaystyle\int_{2}^{4} x^{-2}\,dx$

b $\displaystyle\int_{1}^{5} 4x^{-5}\,dx$

c $\displaystyle\int_{-3}^{2} 3x^{-4}\,dx$

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Methods of integration

Definite integrals (3)

QUESTION **1**   Find:

a $\displaystyle\int_0^4 x^{\frac{1}{2}}dx$

b $\displaystyle\int_1^8 2x^{\frac{2}{3}}dx$

c $\displaystyle\int_4^9 6x^{-\frac{1}{2}}dx$

QUESTION **2**   Find the exact value of:

a $\displaystyle\int_0^4 \frac{x^3}{2}\,dx$

b $\displaystyle\int_1^2 7y^6\,dy$

c $\displaystyle\int_2^3 (6t^2 - 10t + 3)\,dt$

d $\displaystyle\int_{-1}^1 \pi r^2\,dr$

e $\displaystyle\int_{-2}^{-1} (a^2 + a)\,da$

f $\displaystyle\int_{-1}^3 (u - 1)^3\,du$