Essential Skills 23

The skills in this series of worksheets appear frequently.

These are the GIFTS you must take to succeed

Further Integration

Find the integral of each, leaving your answers as positive indices:

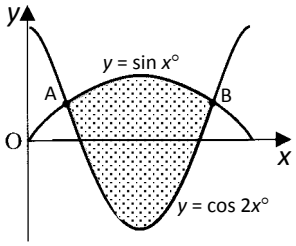
1. $\int 8(2x+1)^3\,dx$
2. $\int (x-1)^4\,dx$
3. $\int (3-2x)^3\,dx$
4. $\int (3x+1)^{\frac{1}{3}}\,dx$
5. $\int 2(4x+1)^{-2}\,dx$
6. $\int (9-x)^{-\frac{1}{2}}\,dx$
7. $\int \sqrt{3x-2}\,dx$
8. $\int sin2x\,dx$
9. $\int 3cos3x - 2sin2x\,dx$
10. $\int \frac{5}{4}\cos(5x-\frac{\pi}{4})\,dx$

APPLYING QUESTIONS

1. The diagram shows part of the graphs of $y = sinx$ and $y = cos2x$ $(0 \leq x \leq \pi)$

   (a) Find the x values of A and B algebraically.

   (b) Calculate the shaded area.



2. (a) Show that: $cos^2x = \frac{1}{2}cos2x + \frac{1}{2}$

   (b) Hence find: $\int 3cos^2x\,dx$