

## A2 Maths $\xi$ (xi) Test Version O

1)  $\int \frac{2}{\cos^2 \frac{x}{2}} dx$

2)  $\int \sec 3x \tan 3x dx$

3)  $\int \operatorname{cosec} 2x \cot 2x dx$

4)  $\int \frac{2x^3+x-1}{(x+2)(x-3)} dx$

5)  $\int \frac{x^2+1}{x^2-1} dx$

6)  $\int_2^3 \frac{4x^3-1}{(x-1)^2(2x-1)} dx$  (Give an exact answer)

## A2 Maths $\xi$ (xi) Test Version P

1)  $\int \frac{3}{\cos^2 \frac{x}{2}} dx$

2)  $\int \sec 4x \tan 4x dx$

3)  $\int \operatorname{cosec} 12x \cot 12x dx$

4)  $\int \frac{2x^3-x-1}{(x+2)(x-3)} dx$

5)  $\int \frac{x^2+4}{x^2-4} dx$

6)  $\int_2^3 \frac{2x^3-1}{(x-1)^2(2x-1)} dx$  (Give an exact answer)

## A2 Maths $\xi$ (xi) Test Version Q

1)  $\int \frac{3}{\cos^2 \frac{x}{3}} dx$

2)  $\int \sec 13x \tan 13x dx$

3)  $\int \operatorname{cosec} 21x \cot 21x dx$

4)  $\int \frac{2x^3 - x - 1}{(x-2)(x-3)} dx$

5)  $\int \frac{9x^2 + 4}{9x^2 - 4} dx$

6)  $\int_2^3 \frac{4x^3 - 1}{(x-1)^2(2x+1)} dx$  (Give an exact answer)

## A2 Maths $\xi$ (xi) Test Version R

1)  $\int \frac{-7}{\cos^2 \frac{x}{9}} dx$

2)  $\int \sec 10x \tan 10x dx$

3)  $\int \operatorname{cosec} 211x \cot 211x dx$

4)  $\int \frac{3x^3 - x - 1}{(x-2)(x-3)} dx$

5)  $\int \frac{9x^2 + 1}{9x^2 - 1} dx$

6)  $\int_2^3 \frac{x^3 - 1}{(x-1)^2(x+1)} dx$  (Give an exact answer)

**Version O Answers**

- 1)  $4 \tan \frac{x}{2} + c$
- 2)  $\frac{1}{3} \sec 3x + c$
- 3)  $-\frac{1}{2} \operatorname{cosec} 2x + c$
- 4)  $x^2 + 2x + \frac{19}{5} \ln|x + 2| + \frac{56}{5} \ln|x - 3| + c$
- 5)  $x - \ln|x + 1| + \ln|x - 1| + c$
- 6)  $\frac{7}{2} + \ln\left(\frac{192}{5}\right)$

**Version P Answers**

- 1)  $6 \tan \frac{x}{2} + c$
- 2)  $\frac{1}{4} \sec 4x + c$
- 3)  $-\frac{1}{12} \operatorname{cosec} 12x + c$
- 4)  $x^2 + 2x + 3 \ln|x + 2| + 10 \ln|x - 3| + c$
- 5)  $x - 2 \ln|x + 2| + 2 \ln|x - 2| + c$
- 6)  $\frac{3}{2} + \frac{1}{2} \ln\left(\frac{6912}{125}\right)$

**Version Q Answers**

- 1)  $9 \tan \frac{x}{3} + c$
- 2)  $\frac{1}{13} \sec 13x + c$
- 3)  $-\frac{1}{21} \operatorname{cosec} 21x + c$
- 4)  $x^2 + 10x - 13 \ln|x - 2| + 50 \ln|x - 3| + c$
- 5)  $x - \frac{2}{3} \ln|3x + 2| + \frac{2}{3} \ln|3x - 2| + c$
- 6)  $\frac{5}{2} + \frac{1}{3} \ln\left(\frac{10}{7}\right)$

**Version R Answers**

- 1)  $-63 \tan \frac{x}{9} + c$
- 2)  $\frac{1}{10} \sec 10x + c$
- 3)  $-\frac{1}{211} \operatorname{cosec} 211x + c$
- 4)  $\frac{3}{2} x^2 + 15x - 21 \ln|x - 2| + 77 \ln|x - 3| + c$
- 5)  $x - \frac{1}{3} \ln|3x + 1| + \frac{1}{3} \ln|3x - 1| + c$
- 6)  $1 + \frac{1}{2} \ln 6$