

A2 Maths Test 3 Version O

- 1) Solve $\sec \theta = 5$ for $0 \leq \theta \leq 360^\circ$ giving your answer correct to 3 sf
- 2 Simplify $\frac{x+2}{x^2-4}$
- 3) Solve $e^{3x-2} = 4$ giving your answer to 3 s.f.
- 4) Differentiate the following expressions with respect to x
 - a) e^x
 - b) e^{3x-2}
 - c) $\ln x$
- 5) On the curve with equation $y = (3x+1)^6$, the point P has x coordinates of 0. Find the equation of the tangent to the curve at P .

A2 Maths Test 3 Version P

- 1 Solve $\operatorname{cosec} \theta + 3 = 0$ for $0 \leq \theta \leq 2\pi$, giving your answer correct to 3 sf
- 2 Simplify $\frac{x^2+3x}{x^3+5x^2+6x}$
- 3) Solve $e^{3x-2} = 4$ giving your answer to 3 s.f.
- 4) Differentiate the following expressions with respect to x
 - a) e^x
 - b) $\ln(4x-2)$
 - c) $\ln(2x^3-1)$
- 5) On the curve with equation $y = (3x+1)^6$, the point P has x coordinates of 0. Find the equation of the tangent to the curve at P .

A2 Maths Test 3 Version Q

- 1) Solve $\sec \theta = 5$ for $0 \leq \theta \leq 360^\circ$ giving your answer correct to 3 sf
- 2) Simplify $\frac{x}{x^2+4x+4} - \frac{2}{x^2-4}$
- 3) Solve $\ln(3x - 2) = 0.2$ giving your answer to 3 s.f.
- 4) Differentiate the following expressions with respect to x
 - a) e^{2x^2}
 - b) $\ln x$
 - c) $\ln(4x - 2)$
- 5) On the curve with equation $y = (3x + 1)^6$, the point P has x coordinates of 0. Find the equation of the tangent to the curve at P .

A2 Maths Test 3 Version R

- 1) Solve $\cot^2 \theta - 1 = 0$ for $-\pi \leq \theta \leq \pi$, giving exact answers in terms of π
- 2) Simplify $\frac{x}{x^2+4x+4} - \frac{2}{x^2-4}$
- 3) Solve $\ln(3x - 2) = 0.2$ giving your answer to 3 s.f.
- 4) Differentiate the following expressions with respect to x
 - a) e^x
 - b) $\ln(4x - 2)$
 - c) $\ln(2x^3 - 1)$
- 5) On the curve with equation $y = (3x + 1)^6$, the point P has x coordinates of 0. Find the equation of the tangent to the curve at P .

Answers Version O

1) $78.5^\circ, 282^\circ$

2) $\frac{1}{x-2}$

3) 1.13

4) a) e^x b) $3e^{3x-2}$ d) $\frac{1}{x}$

5) $18x - y + 1 = 0$

Answers Version P

1) 3.48, 5.94

2) $\frac{1}{x+2}$

3) 1.13

4) ii) a) e^x b) $\frac{4}{4x-2}$ c) $\frac{6x^2}{2x^3-1}$

5) $18x - y + 1 = 0$

Answers Version Q

1) $78.5^\circ, 282^\circ$

2) $\frac{x^2 - 4x - 4}{(x+2)^2(x-2)}$

3) 1.07

4) a) $4x e^{2x^2}$ b) $\frac{1}{x}$ c) $\frac{4}{4x-2}$

5) $18x - y + 1 = 0$

Answers Version R

1) $-\frac{3\pi}{4}, -\frac{\pi}{4}, \frac{\pi}{4}, \frac{3\pi}{4}$

2) $\frac{x^2 - 4x - 4}{(x+2)^2(x-2)}$

3) 1.07

4) a) e^x b) $\frac{4}{4x-2}$ c) $\frac{6x^2}{2x^3-1}$

5) $18x - y + 1 = 0$

