

A Level Maths - Paper 1 - 2023 Mark Scheme

No. ph	Question	Answer	Marks
1	$\int \frac{\sqrt{x(2x-5)}}{3} dx$	$\frac{4}{15}x^{\frac{5}{2}} - \frac{10}{9}x^{\frac{3}{2}} + C$	4
2	$f(x) = 4x^3 + 5x^2 - 10x + 4a$ a) Given that $(x - a)$ is a factor of $f(x)$ Find the value of a b) Solve $f(x) = 3$	$a = \frac{3}{4}$ $x = 0, \frac{-5 \pm \sqrt{185}}{8}$	3
3	$a = \log_2 x$ $b = \log_2(x + 8)$ Write the following in terms of a and b : a) $\log_2 \sqrt{x}$ b) $\log_2(x^2 + 8x)$ c) $\log_2(8 + \frac{64}{x})$	a) $\frac{1}{2}a$ b) $a + b$ c) $3 + b - a$	a) 1 b) 2 c) 3 Total: 6
4)	a) Prove the distance of OA is $\sqrt{38}$ b) Find min value of a given $ OB > OA $	b) $a > 3\sqrt{2}$, but a is an integer so $a = 5$	a) 1 b) 2 Total: 3
5	a) Find α b) $f(x) \equiv -1/2 \cos x = 0$	$\alpha = -0.24...$ $y = \frac{1}{2}x + 3$	a) 3 b) 2 Total: 5
6	a) i) Find the centre of the circle ii) Find the radius b) range of values values for k	a) i) $C(-3k, k)$ ii) $r = \sqrt{10k^2 - 7}$ b) $k < 7 - \sqrt{85}$ or $k > 7 + \sqrt{85}$	a) 3 b) 6 Total: 9

Pixl Club Edexcel Maths Mark Scheme

Sebastian Brünink

A red circular graphic with a gradient, appearing as a semi-circle or a partial circle, located to the right of the author's name.

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