Name:	Date:
Question 1: Find the coordinates of the points of intersection of the line $y = 2x - 1$ and the circle $x^2 + y^2 + 3x - 2y - 153 = 0$.	11·3 Bronze Outcome 1
Question 2: Find the value of value of k such that the equation $3x^2 - 4x + k = 0$ has equal roots.	8·4 Bronze Outcome 1
Question 3: Calculate; $\int \cos 6x \, dx$	13·2 Silver Outcome 2
Question 4: Solve $\sqrt{2}\sin 2x = 2\cos x$ for $\pi \leq x \leq 2\pi$.	10·2 Silver Outcome 2
Question 5: Solve the following logarithmic equation. $\log_2(x+3) + \log_2(x+1) = 3$	14·2 Gold Outcome 3
My score:	

Exam Questions

Question 1:

Given that $\cos D = \frac{2}{\sqrt{5}}$ and $0 < D < \frac{\pi}{2}$,

find the exact values of $\sin D$ and $\cos 2D$. (4)

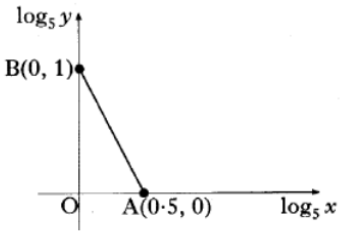
Question 2:

(a) Express $3\cos(x°) + 5\sin(x°)$ in the form $k\cos(x° - a°)$ where $k > 0$ and $0 \le a \le 90$. 4

(b) Hence solve the equation $3\cos(x°) + 5\sin(x°) = 4$ for $0 \le x \le 90$. 3

Question 3:

The graph illustrates the law $y = kx^n$.



If the straight line passes through A(0·5, 0) and B(0, 1), find the values of k and n. 4

My score: