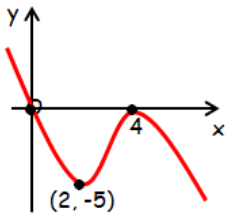
Name:	Date:
Question 1: A function is given by k(x) = 9(x – 2). Find the inverse function $k^{-1}(x)$.	3·3 Outcome 1
Question 2: Express $-3x^2 - 12x + 5$ in the form $a(x+b)^2 + c$.	8·2 Silver Outcome 1
Question 3: Find the equation of the tangent at the point (-7, 5) on the circle $x^2 + y^2 - 2x - 18y - 4 = 0$.	11·2 Silver Outcome 2
Question 4: If x is an acute angle with $\sin x = \frac{5}{13}$ find the exact value of $\sin 2x$.	10·1 Bronze Outcome 1
Question 5: The graph of y = f(x) is shown below.  Sketch the graph of y = f'(x).	6·4 Gold Outcome 3
My score:	

Exam Questions

Question 1:

Find $\int \frac{1}{3x^4}\,dx$, where $x \neq 0$.

2

Question 2:

Solve the equation
$\cos 2x° + 2\sin x° = \sin^2 x°$
in the interval $0 \leq x < 360$. **5**

Question 3:

(*a*) Given that $(x - 1)$ is a factor of $x^3 + 3x^2 + x - 5$, factorise this cubic fully. **4**

(*b*) Show that the curve with equation

$$y = x^4 + 4x^3 + 2x^2 - 20x + 3$$

has only one stationary point.

Find the x-coordinate and determine the nature of this point. **5**

My score: