Name:	Date:
Question 1: Show that $(x+1)$ is a factor of $f(x) = x^3 - x^2 - 10x - 8$ and hence factorise it fully.	7·1 Bronze Outcome 1
Question 2: A function is given as $g(x) = \frac{5}{4x^2}$. Calculate g'(-3).	6·2 Silver Outcome 2
Question 3: Two functions are defined as $h(x) = 4x^2 + 1$ and $k(x) = 3x + 2$. Calculate h(k(-2)).	3·2 Silver Outcome 2
Question 4: A function is given by $h(x) = 4(x-3)$. Find the inverse function $h^{-1}(x)$.	3·3 Outcome 1
Question 5: For what values of x is the function $y = \frac{1}{3}x^3 - 3x^2 - 16x$ decreasing?	6·4 Bronze Outcome 1
My score:	

Exam Questions

Question 1:

(a) Find the equation of ℓ_1, the perpendicular bisector of the line joining P(3, –3) to Q(–1, 9). 4

(b) Find the equation of ℓ_2 which is parallel to PQ and passes through R(1, –2). 2

(c) Find the point of intersection of ℓ_1 and ℓ_2. 3

Question 2:

A curve has equation $y = x^4 - 2x^3 + 5$.

Find the equation of the tangent to this curve at the point where $x = 2$. 4

Question 3:

Line l_1 has equation $\sqrt{3}y - x = 0$.

(a) Line l_2 is perpendicular to l_1.
Find the gradient of l_2. 2

(b) Calculate the angle l_2 makes with the positive direction of the x-axis. 2

My score: