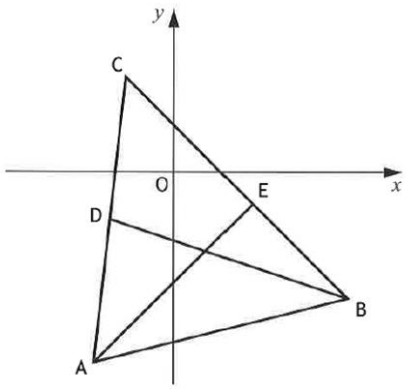
Name:	Date:
Question 1: Factorise fully $f(x) = x^3 - 7x - 6$.	7·1 Silver Outcome 2
Question 2: State a suitable domain and range, on the set of real numbers, for the following function; $g(x) = 3sin\sqrt{x+1}$	3·1 Gold Outcome 1
Question 3: Find the coordinates of the stationary points of the curve with equation $y = x^3 - 3x + 9$ and determine their nature. 	6·5 Bronze Outcome 1 6·5 Silver Outcome 2
Question 4: Two functions are defined as $h(x) = x^2 + 2$ and $k(x) = 3x - 6$. Calculate $h(k(x))$.	3·2 Silver Outcome 2
Question 5: Find the equation of the tangent to the curve $y = x^3 + x^2 - 9x + 8$ at the point where $x = -3$.	6·3 Silver Outcome 2
My score:	

Exam Questions

Question 1:

Triangle ABC has vertices A(−5,−12), B(11,−8) and C(−3,6).



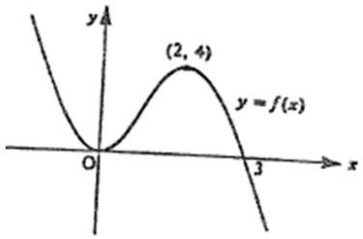
(a) Find the equation of the median BD. 3

(b) Find the equation of the altitude AE. 3

(c) Find the coordinates of the point of intersection of BD and AE. 2

Question 2:

The diagram opposite shows a sketch of the cubic function f with stationary points at (0, 0) and (2, 4).



(3)

Sketch the graph of the derived function f'.

Question 3:

The diagram shows a sketch of functions f and g where $f(x) = x^3 + 5x^2 - 36x + 32$ and $g(x) = -x^2 + x + 2$.

The two graphs intersect at the points A, B and C.

Determine the x-coordinate of each of these three points.

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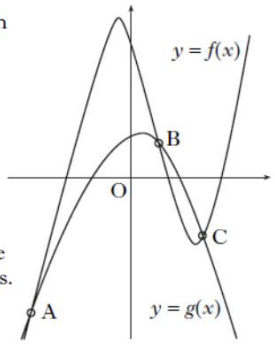

My score: