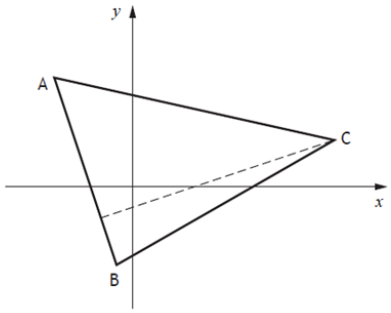
Name:	Date:
Question 1: State a suitable domain, on the set of real numbers, for the function; $f(x) = \sqrt{4x - 1}$	3·1 Silver Outcome 2
Question 2: Find the equation of the tangent to the curve $y = x^3 + x^2 - 9x + 8$ at the point where $x = -3$.	6·3 Silver Outcome 2
Question 3: Prove that the points P(1, 2), Q(4, 17) and R(9, 42) are collinear.	1·7 Outcome 1
Question 4: Two functions are defined as $f(x) = x^2 - 5$ and $g(x) = 4x - 1$. Calculate $g(f(x))$.	3·2 Silver Outcome 2
Question 5: For what values of x is the function $y = x^2 + 10x - 7$ increasing?	6·4 Bronze Outcome 1
My score:	

Exam Questions

Question 1:

The vertices of triangle ABC are A(−5, 7), B(−1, −5) and C(13, 3) as shown in the diagram.

The broken line represents the altitude from C.



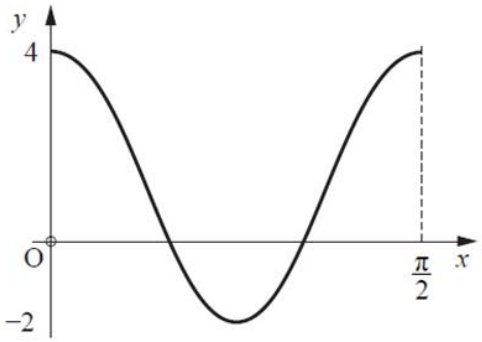
(a) Show that the equation of the altitude from C is $x - 3y = 4$. 4

(b) Find the equation of the median from B. 3

(c) Find the coordinates of the point of intersection of the altitude from C and the median from B. 2

Question 2:

The diagram shows part of the graph of the function $y = p\cos qx + r$.



Write down the values of p, q and r. 3

Question 3:

Functions f and g are defined on $\mathbb{R}$, the set of real numbers.

The inverse functions f^{-1} and g^{-1} both exist.

(a) Given $f(x) = 3x + 5$, find $f^{-1}(x)$. 3

(b) If $g(2) = 7$, write down the value of $g^{-1}(7)$. 1

My score: