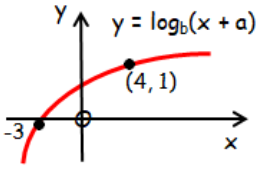
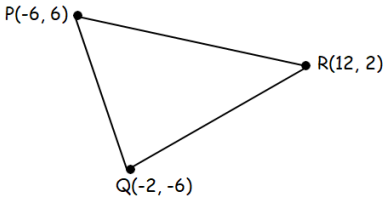
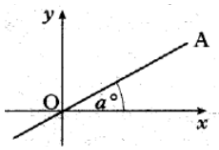
Name:	Date:
Question 1: Find the equation of the straight line which is perpendicular to the line with equation $y = 5x + 1$ and which passes through the point $(3, -7)$.	1·6 Silver Outcome 2
Question 2: Part of the graph of $y = \log_b(x + a)$ is shown in the diagram.  Write down the values of a and b.	4·2 Silver Outcome 2
Question 3: Differentiate with respect to x, $$y = \frac{5}{\sqrt{x}}$$	6·1 Silver Outcome 2
Question 1: Triangle ABC has vertices P(-6, 6), Q(-2, -6) and R(12, 2).  (a) Find the equation of the median from Q. (b) Find the equation of the altitude from R. (c) Find the coordinates of the point of intersection of the median from Q and the altitude from R.	1·8 Bronze Outcome 1 1·8 Silver Outcome 2 1·9 Gold Outcome 3
Question 5:  The area of a rectangle can be represented by the formula $A(x) = 150x - 2x^3$. Find the value of x which maximises the area of the rectangle and calculate this maximum area.	6·7 Outcome 1
My score:	

Exam Questions

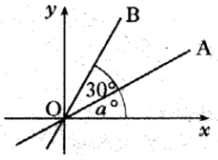
Question 1:

(*a*) The diagram shows line OA with equation $x - 2y = 0$.



The angle between OA and the x-axis is $a°$.

Find the value of a. **3**

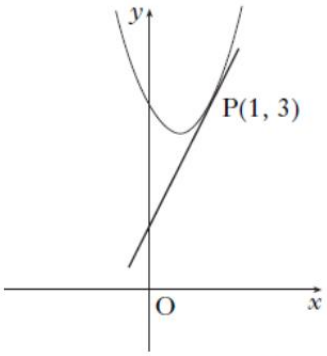


(*b*) The second diagram shows lines OA and OB. The angle between these two lines is 30°.

Calculate the gradient of line OB correct to 1 decimal place. **1**

Question 2:

The diagram shows a parabola with equation $y = 2x^2 - 2x + 3$.



A tangent to the parabola has been drawn at P(1, 3).

Find the equation of this tangent. **4**

Question 3:

Functions $f(x) = \frac{1}{x-4}$ and $g(x) = 2x + 3$

are defined on suitable domains.

(*a*) Find an expression for $h(x)$ where $h(x) = f(g(x))$. **2**

(*b*) Write down any restriction on the domain of h. **1**

3

My score: