Name:	Date:

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Question 1: Calculate the following. $$\int \frac{4}{\sqrt[4]{x}}\ dx$$	9·1 Silver Outcome 2
Question 2: Solve x² - 2x - 80 > 0.	8·3 Silver Outcome 2
Question 3: Simplify the following logarithmic expression. $$3\log_6 4 -\ 2\log_6 8$$	14·1 Gold Outcome 3
Question 4: If M is an acute angle with $\tan M = \frac{4}{9}$ find the exact value of $\sin 2M$.	10·1 Bronze Outcome 1
Question 2: A curve for which $\frac{dy}{dx} = x^3 + \frac{1}{x^4} - \frac{1}{2}$ passes through the point (1, 4). Express y in terms of x.	9·3 Outcome 1
My score:	

Exam Questions

Question 1:

A circle has centre C(−2, 3) and passes through P(1, 6).
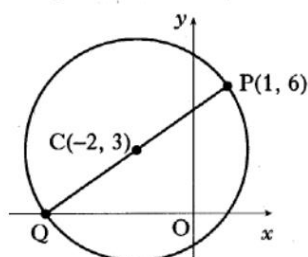
(a) Find the equation of the circle. **2**

(b) PQ is a diameter of the circle. Find the equation of the tangent to this circle at Q. **4**
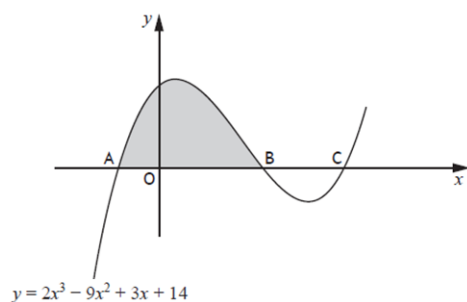
Question 2:

Express $8\cos x° − 6\sin x°$ in the form $k\cos(x + a)°$ where $k > 0$ and $0 < a < 360$.

4

Question 3:

(a)   (i) Show that $(x + 1)$ is a factor of $2x^3 − 9x^2 + 3x + 14$.   **2**

     (ii) Hence solve the equation $2x^3 − 9x^2 + 3x + 14 = 0$.   **3**

(b) The diagram below shows the graph with equation $y = 2x^3 − 9x^2 + 3x + 14$.
The curve cuts the x-axis at A, B and C.

$y = 2x^3 − 9x^2 + 3x + 14$

  (i) Write down the coordinates of the points A and B.   **1**

  (ii) Hence calculate the shaded area in the diagram.   **4**

My score: