Name:	Date:
Question 1: Find the equation of the straight line which is parallel to the line with equation $3y - 2x = 4$ and which passes through the point $(-3, 1)$.	1·6 Bronze Outcome 1
Question 2: For what values of x is the function $y = 3x^2 + 18x - 11$ increasing?	6·4 Bronze Outcome 1
Question 3: Express $4x^2 + 24x - 3$ in the form $a(x + b)^2 + c$.	8·2 Bronze Outcome 1
Question 4: Show that the line $y = x - 6$ is a tangent to the curve $y = x^2 - 9x + 19$ and find the coordinates of the point of contact.	8·5 Silver Outcome 2
Question 5: Solve the equation $\cos 2x° = 3\cos x° - 2$ for $0 \leq x < 360°$.	10·2 Gold Outcome 3
My score:	

Exam Questions

Question 1:

Show that $(k + 3)$ is a factor of $k^3 + 3k^2 - k - 3$ and hence factorise $k^3 + 3k^2 - k - 3$ fully. **4**

Question 2:

The circles with equations $(x-3)^2 + (y-4)^2 = 25$ and $x^2 + y^2 - kx - 8y - 2k = 0$ have the same centre.

Determine the radius of the larger circle. **5**

Question 3:

A sector with a particular fixed area has radius x cm.

The perimeter, P cm, of the sector is given by

$$P = 2x + \frac{128}{x}.$$

Find the minimum value of P. **6**

My score: