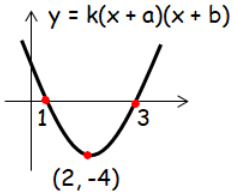
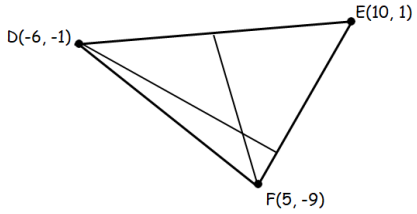
Name:	Date:
Question 1: Differentiate with respect to x, $f(x) = 5x^5 + 9x^3 - 7x + 28$	6·1 Bronze Outcome 1
Question 2: The equation of the parabola shown is of the form y = k(x + a)(x + b).  What is the equation of this quadratic?	8·1 Silver Outcome 2
Question 3: Find the equation of the straight line which is perpendicular to the line which makes an angle of 30° with the positive direction of the x-axis and which passes through the point $(8, -1)$.	1·6 Gold Outcome 3
Question 4: For what values of x is the function $y = x^2 - 8x + 9$ increasing?	6·4 Bronze Outcome 1
Question 5: Triangle DEF has vertices D(-6, -1), E(10, 1) and F(5, -9).  (a) Find the equation of the median from F. (b) Find the equation of the altitude from D. (c) Find the coordinates of the point of intersection of these two lines.	1·8 Bronze Outcome 1 1·8 Silver Outcome 2 1·9 Gold Outcome 3
My score:	

Exam Questions

Question 1:

(*a*) Given that $x + 2$ is a factor of $2x^3 + x^2 + kx + 2$, find the value of k. **3**

(*b*) Hence solve the equation $2x^3 + x^2 + kx + 2 = 0$ when k takes this value. **2**

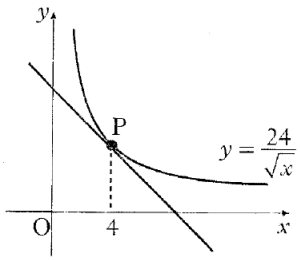
Question 2:

A function f is defined on the domain $0 \le x \le 3$ by $f(x) = x^3 - 2x^2 - 4x + 6$.

Determine the maximum and minimum values of f. **7**

Question 3:

The diagram shows the graph of $y = \frac{24}{\sqrt{x}}$, $x > 0$.



Find the equation of the tangent at P, where $x = 4$. **6**

My score: