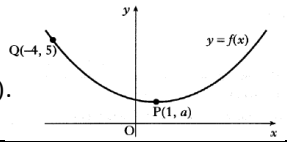
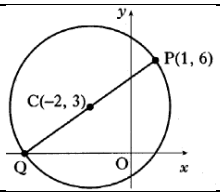
141 Show that $(x-4)$ is a factor of x^3-5x^2+2x+8. Hence, fully factorise and solve x^3-5x^2+2x+8.	
142 Solve $6-x-x^2<0$	
143 Before a forest fire was brought under control, the spread of the fire was described by a law of the form $A=A_0e^{kt}$ where A_0 is the area covered by the fire when it was first detected and A is the area covered by the fire t hours later. If it takes 1.5 hours for the area of the forest fire to double, find the value of the constant k.	
144 Solve $2\sin(2x-60)^\circ=1$ for $0\leq x\leq 360$.	
145 Using $75°=45°+30°$, show that $sin75°=\frac{\sqrt{6}+\sqrt{2}}{4}$.	
146 If $y=3x^{-2}+2x^{\frac{3}{2}}$, $x>0$, determine $\frac{dy}{dx}$.	
147 The parabola with equation $y=x^2-14x+53$ has a tangent at the point P(8, 5). Find the equation of this tangent.	
148 Find $\int\frac{(x^2-2)(x^2+2)}{x^2}\,dx$, $x\neq 0$	
149 The curve $y=f(x)$ is such that $\frac{dy}{dx}=4x-6x^2$. The curve passes through the point (-1, 9). Express y in terms of x.	
150 Express $3cosx°+4sinx°$ in the form $kcos(x-a)°$ Hence, solve $3cosx°+4sinx°=5$	

151 $f(x) = 8x^2 - 5$ and $g(x) = 5 + x$ Find $f\big(g(x)\big)$ and $g\big(f(x)\big)$.	
152 The diagram shows the graph of a function $y = f(x)$. Sketch the graphs of: $y = f(x-4)$ and $y = 2 + f(x-4)$. 	
153 A(0, -3, 5), B(7, -6, 9) and C(21, -12, 17). Show that A, B and C are collinear, stating the ratio AB:BC.	
154 P is the point (-1, 2, -1) and Q is (3, 2, -4). Write down PQ in component form. Calculate the length of $\overrightarrow{PQ}$. Find the components of a unit vector which is parallel to $\overrightarrow{PQ}$.	
155 Prove the identity: $cos^2Q tan^2Q = 1 - cos^2Q$	
156 The point A has coordinates (7, 4). The straight lines with equations $x + 3y + 1 = 0$ and $2x + 5y = 0$ intersect at B. Find the gradient of AB.	
157 A triangle has vertices A(5, 5), B(-10, 0) and C(0, -10). Find the equation of the altitude from A.	
158 A circle has centre C(-2, 3) and passes through P(1, 6). Find the equation of the circle. 	
159 A sequence is defined by the recurrence relation $u_{n+1} = 0.8u_n + 12,\ u_0 = 4$. State why this sequence has a limit and find this limit.	
160 Calculate the area between the line $y = x + y = 18$ and the curve $y = x^2 - 8x + 18$.