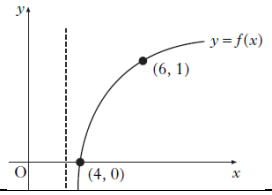
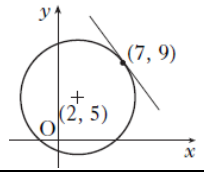
21 Show that $(x-1)$ is a factor of x^3-3x+2. Hence or otherwise factorise x^3-3x+2 fully.	
22 $2x^2+4x+7$ is expressed in the form $2(x+p)^2+q$. What is the value of q.	
23 If $log_4 12 - log_4 x = log_4 6$, what is the value of x?	
24 Solve $2cosx = \sqrt{3}$ for x, where $0 \leq x < 2\pi$.	
25 If the exact value of $cosx$ is $\frac{1}{\sqrt{5}}$, find the exact value of $cos2x$.	
26 Given that $f(x) = (4-3x^2)^{\frac{-1}{2}}$ on a suitable domain, find $f'(x)$.	
27 Find the coordinates of the stationary points on the curve $f(x) = x^3 - 3x + 2$ and determine their nature.	
28 Find $\int \left(4x^{\frac{1}{2}} + x^{-3}\right) dx$, where $x > 0$.	
29 The graph of $y = f(x)$ passes through the point $\left(\frac{\pi}{9}, 1\right)$. If $f'(x) = \sin(3x)$ express *y* in terms of x.	
30 Write $sinx - cosx$ in the form $ksin(x-a)$ stating the values of *k* and *a* where $k > 0$ and $0 \leq a \leq 2\pi$.	

31	Functions f and g are given by $f(x) = 3x + 1$ and $g(x) = x^2 - 2$. Find $f\big(g(x)\big)$ *and* $g(f(x))$.	
32	The diagram shows the graph of $y = f(x)$ where f is a logarithmic function. What are the values of a and b for $(x) = log_a(x - b)$? 	
33	The vectors $\boldsymbol{u} = \begin{pmatrix} k \\ -1 \\ 1 \end{pmatrix}$ and $\boldsymbol{v} = \begin{pmatrix} 0 \\ 4 \\ k \end{pmatrix}$ are perpendicular. What is the value of k?	
34	D, E and F have coordinates $(10, -8, -15)$, $(1, -2, -3)$ and $(-2, 0, 1)$ respectively. Show that D, E and F are collinear and find the ratio in which E divides DF.	
35	Prove that $\frac{cos^3x}{1-sin^2x} = cosx$.	
36	The line L passes through the point $(-2, -1)$ and is parallel to the line with equation $5x + 3y - 6 = 0$. What is the equation of L?	
37	Triangle PQR has vertices at $P(-3, -2), Q(-1, 4)$ and $R(3, 6)$. PS is a median. What is the gradient of PS?	
38	The diagram shows a circle, centre $(2, 5)$ and a tangent drawn at the point $(7, 9)$. What is the equation of this tangent? 	
39	A sequence is generated by the recurrence relation $u_{n+1} = 0.4u_n - 240$. What is the limit of this sequence as $\rightarrow \infty$?	
40	Calculate the shaded area enclosed by the curve $y = x^3(3 - x)$ and the x-axis between $x = 0$ and $x = 3$.