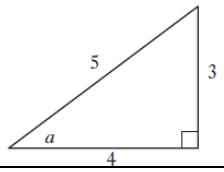
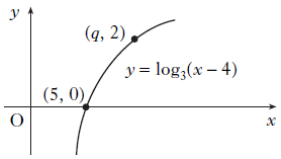
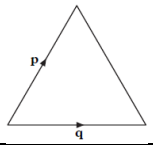
61 Show that $x = 1$ is a root of $x^3 + 8x^2 + 11x - 20 = 0$. Hence factorise $x^3 + 8x^2 + 11x - 20$ fully.	
62 The roots of the equation $kx^2 - 3x + 2 = 0$ are equal. Calculate the value of *k*.	
63 Evaluate $log_2 \frac{1}{16}$.	
64 Solve the equation $3cos2x + cosx = -1$ in the interval $0 \leq x \leq 360$.	
65 The diagram shows a right-angled triangle with sides and angles marked. What is the value of $cos2a$? 	
66 $A = 2\pi r^2 + 6\pi r$. What is the rate of change of *A* with repect to *r* when $r = 2$?	
67 Find the equation of the tangent to the curve $y = x^3 - 3x^2 + 2x$ at the point where x =1.	
68 Find $\int \frac{1}{3x^4}\, dx$, where $x \neq 0$.	
69 Evaluate $\int_0^{\frac{\pi}{2}} sin2x + cos2x \; dx$.	
70 Write $3cosx° + 4sinx°$ in the form $kcos(x + a)$ for $k > 0$ and $0 \leq x \leq 360$	

71 Functions f and g are defined on the set of real numbers by $f(x) = x^2 + 3$ and $g(x) = x + 4$. Find expressions for $f\big(g(x)\big)$ and $g\big(f(x)\big)$.	
72 The diagram shows part of the graph of $y = log_3(x - 4)$. The point $(q, 2)$ lies on the graph. What is the value of q? 	
73 Given that the ratio $S(-4, 5, 1), T(-16, -4, 16)$ and $U(-24, -10, 26)$ are collinear, calculate the ratio in which T divides SU.	
74 An equilateral triangle of side 3 units is shown. The vectors **p** and **q** are as represented in the diagram. What is the value of **p.q**? 	
75 Convert $135°$ into radians and convert $\frac{2\pi}{3}$ into degrees.	
76 Calculate the distance between the points (4, -1) and (7, 3).	
77 A triangle has vertices P(1, 8), Q(-12, -2) and R(8, -6). Calculate the median PS.	
78 The line with equation $y = 2x$ intersects the circle with equation $x^2 + y^2 = 5$ at the points J and K. What are the x-coordinates of J and K?	
79 A sequence is generated by the recurrence relation $u_{n+1} = 0.7u_n + 10$. What is the limit of this sequence as $n \to \infty$?	
80 Calculate the shaded area shown in the diagram.