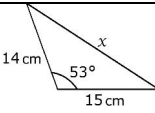


Core 2 Essential skills 1

Student Name:	Target:
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1	Evaluate: $\left(\frac{2}{5}\right)^{-2}$	
2	Write as a power of x: $\frac{(x^3)^4}{x^5}$	
3	Solve the equation: $5^x = \frac{1}{125}$	
4	State the geometrical transformation that maps $y = f(x)$ onto $y = f(x + 5)$	
5	The point Q lies on the graph $y = g(x)$ and has coordinates (3,5). Find the coordinates of the image of Q for $y = -g(x)$	
6	Find the limit that this sequence converges to: $u_{n+1} = \frac{u_n}{6} + 10$	
7	The 5 th term of an arithmetic sequence is 3 and the 12 th term is 24. Find the n th term.	
8	Evaluate $\sum_{r=1}^{15} 3r + 6$	
9	The 5 th term of a geometric sequence is 80 and the 11 th term is 5120. Find the n th term.	
10	Find the sum of the first 20 terms of $4 + 8 + 16 + 32 \dots$	
11	Find the coefficient of x^3 in the expansion of $(1 + 2x)^5$	
12	 <p style="margin-left: 20px;">Find the missing length and area of the triangle</p>	
13	A sector has an angle of $\frac{\pi}{4}$ and a radius of 12cm. Find the perimeter and area.	
14	Solve: $\sin \theta - \sqrt{3} \cos \theta = 0$ in the range $0 \leq \theta \leq 2\pi$	
15	Solve: $2 \cos^2 x - \sin x = 1$ in the range $0 \leq x \leq 360$	
16	Solve: $\log_x 16 - \log_x 2 = 3$	
17	Solve for x : $4^{3x-2} = 25$	
18	Given that $f(x) = 3x^2 \sqrt{x}$, find $f'(x)$	
19	Use the trapezium rule with four ordinates to calculate an approximation to $\int_0^3 \sqrt{2x}$	
20	Find the indefinite integral: $\int \frac{1}{x^4} dx$	