12 **(a)** Show that $\frac{1}{\text{cosec}\,\theta - 1} + \frac{1}{\text{cosec}\,\theta + 1} = 2\sin\theta\sec^2\theta$. [3]

(b) Hence solve the equation $\frac{1}{\text{cosec}\,2\phi - 1} + \frac{1}{\text{cosec}\,2\phi + 1} = 4\sin 2\phi$, for $-90° \leqslant \phi \leqslant 90°$. [6]

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13 Given that $f''(x) = 6(3x+4)^{-\frac{1}{2}}$, $f'(4) = 18$ and $f(4) = \frac{512}{9}$, find $f(x)$. [8]

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