11 **(a)** Solve the equation $3\,\text{cosec}^2\theta - 5 = 5\cot\theta$ for $0° \leqslant \theta \leqslant 180°$. [4]

(b) Solve the equation $\sin\left(\phi + \frac{\pi}{3}\right) = -\frac{1}{2}$, where ϕ is in radians and $-\pi \leqslant \phi \leqslant \pi$. Give your answers in terms of π. [4]

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