5 **(a)** Find the exact solutions of the equation $6p^{\frac{1}{3}} - 5p^{-\frac{1}{3}} - 13 = 0$. [4]

(b) Solve the equation $2\lg(2x+5) - \lg(x+2) = 1$, giving your answers in exact form. [6]

6 **(a)** Given that $\cot^2\theta = \frac{1}{y+2}$ and $\sec\theta = x-4$, find y in terms of x. [2]

(b) Solve the equation $\sqrt{3}\,\text{cosec}\left(2\phi + \frac{3\pi}{4}\right) = 2$, for $-\pi < \phi < \pi$, giving your answers in terms of π. [5]

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