10 **(a)** It is given that $2+\cos\theta = x$ for $1 < x < 3$ and $2\,\text{cosec}\,\theta = y$ for $y > 2$. Find y in terms of x. [4]

(b) Solve the equation $3\cos\frac{\phi}{2} = \sqrt{3}\sin\frac{\phi}{2}$ for $-4\pi < \phi < 4\pi$. [5]

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