Answer:

$$\theta_{\mathsf{MAP}} = \mathsf{argmax}_\theta \, p(\theta|x, y) = \mathsf{argmax}_\theta \, \frac{p(\theta, x, y)}{p(x, y)} = \mathsf{argmax}_\theta \, \frac{p(\theta, x, y)}{p(x, \theta)} \frac{p(x, \theta)}{p(x, y)}$$

$$= \mathsf{argmax}_\theta \, p(y|x, \theta) \frac{p(x, \theta)}{p(x)} \frac{p(x)}{p(x, y)} = \mathsf{argmax}_\theta \, p(y|x, \theta) p(x)$$

Where at the last step we have used the assumption that $p(\theta) = p(\theta|x)$ (i.e. θ is independent from x (if no knowledge of y)), and that we can drop the terms with no θ since we're argmaxing of θ