Problem 5: Find $\cos\left(\dfrac{3\pi}{2} + \theta\right)$ in terms of $\sin\theta$ or $\cos\theta$. (Source: AoPS Precalculus Ex. 3.1.4)

Solution:

$$
\begin{aligned}
\cos(\frac{3\pi}{2}. + \theta) &= \cos\frac{3\pi}{2}\cos\theta - \sin\frac{3\pi}{2}\sin\theta \\
&= 0 - (-1 \cdot \sin\theta) \\
&= 0 - (-\sin\theta) \\
&= \boxed{\sin\theta}
\end{aligned}
$$