Idioms (Applicative Functors)

$$
\begin{array}{lrcl}
(1) & u & = & \mathit{pure}\ \mathit{id} \otimes u \\
(2) & \mathit{pure}\ f \otimes \mathit{pure}\ p & = & \mathit{pure}\ (f\ p) \\
(3) & u \otimes (v \otimes w) & = & \mathit{pure}\ (\cdot) \otimes u \otimes v \otimes w \\
(4) & u \otimes \mathit{pure}\ x & = & \mathit{pure}\ (\lambda f.\ f\ x) \otimes u
\end{array}
$$

- Conor McBride and Ross Patterson, Applicative Programming with Effects, *Journal of Functional Programming*, 2008.