Domain theory and Exact computation
Exercises 8

1. Show that π_1, π_2 and $f \times g$ in the definition of product are indeed continuous.

2. Show that smash, $\mathsf{unsmash}$ and $f \otimes g$ in the definition of the smash product are all continuous maps.

3. Show that inl, inr and $f \oplus g$ are continuous.

4. Show that the function $[f \to g] : [D_1 \to E_1] \to [D_2 \to E_2]$ with $[f \to g](h) = g \circ h \circ f$, page 102 of the notes, is continuous.

5. Check that all the constructors listed on page 104 are actually functors.

6. Let $(e, p) : D \to E$ be an embedding-projection pair between cpo's D and E. Check that e and p are strict, p is onto, and e is one-to-one and preserves lubs of arbitrary subsets.