

**7.10**

- 1) (a)  $(g \circ f)(u + v) = g(f(u + v)) = g(f(u) + f(v)) = g(f(u)) + g(f(v))$   
 $= (g \circ f)(u) + (g \circ f)(v)$
- (b)  $(g \circ f)(\alpha \cdot u) = g(f(\alpha \cdot u)) = g(\alpha \cdot f(u)) = \alpha \cdot g(f(u)) = \alpha \cdot (g \circ f)(u)$
- 2)  $(g \circ f)(u) = g(f(u)) = g(A u) = B (A u) = (BA) u$