

**The Infinite Actuary Exam STAM Online Course**  
**A.2.5. Practice Problems on Uniform Distributions**

1. [4B.F95.28] Two numbers are drawn independently from a uniform distribution on  $[0, 1]$ . What is the variance of their product?
- A.  $1/144$                       B.  $3/144$                       C.  $4/144$                       D.  $7/144$                       E.  $9/144$
2. Suppose that  $X$  is an exponential random variable with mean  $\theta$ , where  $\theta$  is a continuous uniform on  $(0, 2)$ . Find the mean of  $X$ .
- A. 0.5                      B. 1.0                      C. 1.5                      D. 2.0                      E. 2.5
3. Suppose that  $X$  is an exponential random variable with mean  $\theta$ , where  $\theta$  is a continuous uniform on  $(0, 2)$ . Find the variance of  $X$ .
- A. 1                      B.  $4/3$                       C.  $5/3$                       D.  $6/3$                       E.  $7/3$