

**MATH3/4/68181: EXTREME VALUES AND FINANCIAL RISK**

**SEMESTER 1**

**QUIZ PROBLEM 1**

(Deadline: Tuesday 9 October 2018, 12:00noon)

Suppose  $X$  is a random variable with cumulative distribution function

$$F(x) = 1 - \exp\{-a[\exp(bx) - 1]\}$$

for  $x > 0$ ,  $a > 0$  and  $b > 0$ . Derive the max domain of attraction of  $F$ . Please give full details.

**This problem is worth 2 marks. Marking scheme: 2 marks if the answer is correct, and the derivation is correct and detailed enough; 1 mark if the answer is correct, and the derivation is incorrect or not detailed enough; 1 mark if the answer is incorrect or not given, but the derivation is correct and detailed enough; 0 mark if the answer is correct, but the derivation is not detailed enough; 0 mark if the answer is incorrect, and the derivation is not detailed enough.**

**You can give your written solution to me during any of the lectures or example classes. You can also bring your solution to ATB2.223, place it under the door if I am not in. Email submissions or late submissions will not be accepted. I will mark your solutions and email your mark to you within 24 hours of the deadline. PLEASE DO NOT FORGET TO WRITE YOUR FULL NAME AND ID.**