University of Stirling
Computing Science and Mathematics

MATU9D2: PRACTICAL STATISTICS
WEEKLY ASSIGNMENT 2

This should be submitted via your tutor's box outside **room 4B89**. Ensure that you have the <u>Course Name, your Name and Practical Group clearly marked on your answers</u>. Your answers should be submitted by**.**

Tuesday Group:	**12noon on Friday 3th February**
Thursday Groups:	**4pm on Tuesday 7th February**
Friday Groups:	**4pm on Wednesday 8th February**

All calculations should be performed by hand and calculator (*<u>not computer</u>*). Include all working.

1. Calculate the following probabilities:
    (i) $P(Z < 1)$ (ii) $P(Z < -1.7)$
    (iii) $P(Z > 1.5)$ (iv) $P(Z > -2.4)$
    (v) $P(0.95 < Z < 1.95)$

2. Bob bets Beth £15 that he will do better relative to the class on his biology test than she will on her business law test. Bob's grade was 80 on the biology test, where the mean was 75 and the standard deviation was 4. Beth's grade was 78 on her business law test, where the mean was 72 and the standard deviation was 2.

    Assume that the grades on each test were Normally distributed. By calculating what percentage of the class gained higher grades that Bob and Beth, did Bob win his bet?

3. The weights in kgs of all parcels shipped by an overnight shipping company are Normally distributed, with a mean of 12 kgs and a standard deviation of 3 kgs. Find the percentage of parcels whose weights are as follows.

    (a)   More than 16 kgs
    (b)   Between 10 and 20 kgs
    (c)   More than 19 kgs
    (a)   You are informed that 25% of the parcels are deemed too heavy, what is the definition of too heavy?