STATISTICS APPLIED TO BUSINESS ADMINISTRATION. ACADEMIC YEAR 2016-2017
PRACTICAL EXERCISE 3 (20 MINUTES)

Date: _____

Complete name:_____ ID number:_____

EXERCISE 1 (4 POINTS)

Let X and Y be two independent r.v. such that $X \in \gamma(2,3)$ and $Y \in \gamma(1,1)$. Let us define the r.v. Z such that $Z = 4X + 2Y$.

1. **(2 points)** Providing all relevant details, find out what is the distribution of the r.v. Z.
2. **(2 points)** Providing all relevant details, compute the value of $P(2.73 < Z < 15.5)$.

EXERCISE 2 (6 POINTS)

Let X, Y, W and Z be four r.v. such that: $X \in \chi^2_{10}$, $Y \in t_{12}$, $W \in \mathcal{F}_{8,10}$ and $Z \in \gamma(2,1)$.

1. **(2 points)** Compute k such that $P(4.87 \leq X \leq k) = 0.80$.
2. **(1 point)** Compute $P(W \leq 3.07)$.
3. **(1 point)** Compute $P(Y \leq 2.18)$.
4. **(2 points)** Compute $P(1 \leq Z \leq 3)$.