



## PROBABILITY - ANALYTIC GEOMETRY TEST

4° ESO



**Exercise 1: (1.5 ptos)** I get two cards from a Spanish deck of cards, without replacement. Find the probability that:

- a) They are both spade cards  $3/52$
- b) I get a king and a horse  $4/195$
- c) I get at least a face card  $67/130$

**Exercise 2: (1.5 ptos)** 18% of the people subscribed to a certain video platform have watched "La casa de papel", 15% have watched "The squid game", and 7% of them watched both series. Taking a random spectator find the probability that:

- a) They watched any of the series  $0.26$
- b) They did not watch any of them  $0.74$
- c) They watched "La casa de papel" knowing that they watched "The squid game"  $0.47$

**Exercise 3: (2 ptos)** In a certain city, a company has electric motorbikes and scooters for renting. 65% of their vehicles are motorbikes, and 7% of them have a defective battery, while 12% of the scooters also have a defective battery. Taking a random vehicle find the probability that:

- a) The battery is not defective  $0.91$
- b) I have rented a scooter given that the battery was defective... (and I got stranded in the middle of the street while the thermometer reached )  $44^\circ \text{C}$   $0.48$

**Exercise 4: (1.25 ptos)** Find the continuous and general equations of the straight line that goes through the points  $A(-2,3)$  and  $B(1,-5)$

$$\frac{x+2}{3} = \frac{y-3}{-8} \qquad 8x+3y+7=0$$

**Exercise 5: (1.25 ptos)** Given the straight line  $r \equiv \frac{2-x}{3} = \frac{y+5}{2}$

- a) Find a point and the direction vector  $P(2,-5)$   $\vec{u} = (-3,2)$
- b) Find the general equation of a perpendicular line that goes through the point  $P(7,-1)$   
 $3x-2y-23=0$

**Exercise 6: (1.5 ptos)** Given the straight line  $r \equiv 3x - y - 5 = 0$

- a) Write its parametric and continuous equation

$$P(2,1) \quad \vec{u} = (1,3) \rightarrow r \equiv \begin{cases} x = 2+t \\ y = 1+3t \end{cases} \qquad x-2 = \frac{y-1}{3}$$

- b) Write the general equation of a parallel line going through the point  $B(-5,2)$   $3x - y + 17 = 0$

**Exercise 7: (1 pto)** Find the symmetric of  $P(4,7)$  with respect to the point  $S(-2,5)$   $P'(-8,3)$

