Pregunta 1:

Arellano
$N = 8$
$$\frac{8!}{2! * 2!} = 10,080$$

Pregunta 2:

$P(A \cap B \cap C \cap D) = P(A) * P(B) * P(C) * P(D)$
$P(ND) = 0.85$
$P(A \cap B \cap C \cap D) = 0.85 * 0.85 * 0.85 * 0.85 = 0.5220$

Pregunta 3:

$a)$

x	1	2	3
g(x)	0.10	0.35	0.55

$b)$
$P(X < 3) = 0.45$
$P(Y = 5 \cap X < 3) = 0.20$
$$P(Y = 5|X < 3) = \frac{0.20}{0.45} = 0.4444 = \frac{4}{9}$$

Pregunta 4:

Usando el método de probabilidad Binomial

$P = 0.95 \quad y \quad P' = 0.05$
$N = 4 \quad y \quad x = 2$
$b(2; 4, 0.95) = 4C2 * (0.95)^2 * (0.05)^2 = 0.0135375$

Pregunta 5:

$Com = 4 * 4 * 5 = 80$

Pregunta 6:

$P(A) = 0.40$
$P(RC \cap A) = 0.06$
$$P(RC|A) = \frac{0.06}{0.40} = 0.15$$

Pregunta 7:

Es una función que relaciona un numero cualquiera con un elemento del espacio muestral, esta puede ser discreta o continua.

Pregunta 8:

$a)$

$$P\left(X \le \frac{1}{3}\right) = \int_0^{1/3} 3(1-x) = 3\left(x - \frac{x^2}{2}\right)\Big|_0^{1/3} = \frac{5}{6} - 0 = \frac{5}{6}$$

$b)$

$$P(X > 0.5) = \int_{0.5}^1 3(1-x) = 3\left(x - \frac{x^2}{2}\right)\Big|_{0.5}^1 = \frac{3}{2} - \frac{9}{8} = \frac{3}{8}$$

Pregunta 9:

$$P(F) = P(A \cap B \cap (C \cup D) \cap E)$$
$$P(F) = (0.93)(0.90)\big(1 - (1 - 0.95)(1 - 0.97)\big)(0.97) = 0.8106$$

Pregunta 10:

a) Continua

b) Continua

c) Discreta

Pregunta 11:

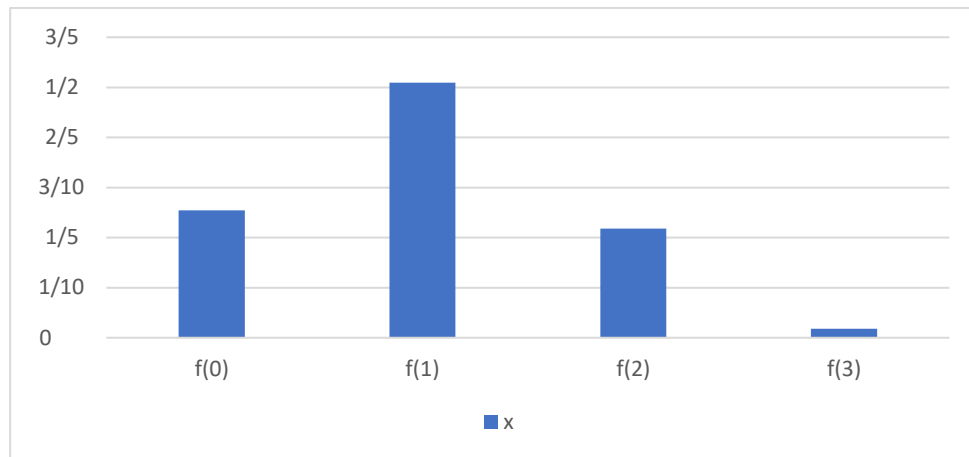$$Ct = 3C2 * 7C3 + 3C3 * 7C2 = 126$$

Pregunta 12

$$f(0) = \frac{\binom{4}{0}\binom{8}{3}}{\binom{12}{7}} = \frac{14}{55}$$

$$f(1) = \frac{\binom{4}{1}\binom{8}{2}}{\binom{12}{7}} = \frac{28}{55}$$

$$f(2) = \frac{\binom{4}{2}\binom{8}{1}}{\binom{12}{7}} = \frac{12}{55}$$

$$f(3) = \frac{\binom{4}{3}\binom{8}{0}}{\binom{12}{7}} = \frac{1}{55}$$

x	0	1	2	3
f(x)	14/55	28/55	12/55	1/55

Pregunta 13:

$(X > 3) = \{4,5,6\}$

$P\big((x + y) = 7\big) = (1,6), (2,5), (3,4), (4,3), (5,2), (6,1) = 1/6$

$P)(X < 3|(x + y) = 7) = \dfrac{3}{6} = \dfrac{1}{2}$