1) (a)

$$T = \{3, 6, 9, 12, 15, 18, 21, 24, 27, 30\}$$
$$F = \{5, 10, 15, 20, 25, 30\}$$
$$T^c = \{1, 2, 4, 5, 7, 8, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23, 25, 26, 28, 29, 31, 32\}$$
$$F^c = \{1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23, 24, 26, 27, 28, 29, 31, 32\}$$

(b)
(i)

$$(F \cup T)^c = F^c \cap T^c$$
$$(F \cup T)^c = \{3, 5, 6, 10, 9, 12, 18, 20, 21, 24, 25, 27\}$$

(ii)

$$(F \cup T)^c = F^c \cap T^c$$
$$(F \cup T)^c = \{3, 5, 6, 10, 9, 12, 18, 20, 21, 24, 25, 27\}$$

(iii)
It's the same.

2) (a)
6*6 = 36 possible outcomes
(1,6),(2,5),(3,4),(4,3),(5,2),(6,1)
6/36= ⅙
(b)
6*6 = 36 possible outcomes
(1,5), (1,6)
(2,5), (2,6)
(3,5), (3,6)
(4,5), (4,6)
(5,1), (5,2), (5,3), (5,4), (5,5), (5,6)
(6,1), (6,2), (6,3), (6,4), (6,5), (6,6)
20 possibilities of the largest number is at least 5.
20/36
(c)
6*6 = 36 possible outcomes
(5,5), (5,6)
(6,5),(6,6)
4 possibilities that both numbers are at least 5
4/36 = 1/9

$$\binom{5}{2} = 10\ OUTCOMES$$

3) (a)
1 possibility
1/10 that both Anderson and Box will be selected.
(b)
(Cox, Anderson), (Cox, Box), **(Cox, Cramer)**, (Cox, Fisher)
(Cramer, Anderson) , (Cramer, Box), **(Cramer, Cox)**, (Cramer, Fisher)
7/10 that at least one of member's names starts with C.
(c)
(7, 10), (7,14), (10,6),(14,3),(14,6)(14,7) = 6 possibilities
6/10= ⅗ probability the 2 chosen have 15 or more years

4)(a)

$$T = \{3, 6, 9, 12, 15, 18, 21, 24, 27, 30\}$$
$$F = \{5, 10, 15, 20, 25, 30\}$$

$$F \cap T = \{15, 30\}$$
$$F \cup T = \{3, 6, 5, 9, 10, 12, 15, 18, 20, 21, 24, 25, 27, 30\}$$

(b)
14/32= 7/16
(c)
2/32 = 1/16
(d)
2/32 / 10/32 = 64/320 = ⅕ = .2
(e)
2/32 / 6/32 = 64/192 = 1/3
(f)
no