Math 310 - Dr. Miller - HW \#23-F: Favorable versus Unfavorable Outcomes

1. An experiment consists of picking one letter of the alphabet. List the favorable outcomes for each event below. (DON'T SKIP unless you've established a good pattern - something like a,...,p is NOT acceptable!)
(a) The letter is at least at the seventh position in the alphabet.
(b) The letter is at most at the seventh position in the alphabet.
(c) The letter's position does not exceed fifteenth in the alphabet.
(d) The letter is at most at the tenth position and is a consonant.
(e) The letter is at most at the tenth position or is a consonant.
(f) The letter is at least eighteenth in the alphabet and occurs in the word SLIPPERY.
(g) The letter is at least 25th in the alphabet or occurs in the word SLIPPERY.
2. An experiment consists of picking one card from a deck containing 8 red cards (numbered 1 through 8), 8 green cards (also numbered 1-8), 4 blue cards (number $3,4,5,6$ ), and 4 black cards (numbered $2,4,6,8$ ). List the favorable outcomes for each event below. (DON'T SKIP unless you've established a good pattern!)
(a) Getting a card that is blue or has the number 8 on it
(b) Getting a card that is blue and has a prime number on it
(c) Getting a card that is a color on the US flag or has an even number on it
(d) Getting a card whose color starts with B and whose number is more than 5
(e) Getting a red card or a card with a perfect square number on it
(f) Getting a card that is green and has a number smaller than 4 on it
(g) Getting a card that is green or has a number smaller than 4 on it
3. (a) $\mathrm{g}, \mathrm{h}, \mathrm{i}, \mathrm{j}, \ldots, \mathrm{y}, \mathrm{z}(20$ letters)
(b) a,b,c,d,e,f,g (7 letters)
(c) a,b,c,d,e,f,g,h,i,j,k,l,m,n,o (15 letters)
(d) b,c,d,f,g,h,j (7 letters)
(e) a,b,c,d,e,f,g,i,j,k,l,m,n,p,q,r,s,t,v,w,x,y,z (in other words, everything but o, u, so 24 letters)
(f) $y$
(g) s,l,i,p,e,r,y,z (8 letters)
4. (a) Blue 3, Blue 4, Blue 5, Blue 6, Red 8, Green 8, Black 8 (7 cards)
(b) Blue 3, Blue 5
(c) Red 1, Red 2, through Red 8, Blue 3, Blue 4, Blue 5, Blue 6, Green 2, Green 4, Green 6, Green 8, Black 2, Black 4, Black 6, Black 8 (20 cards)
(d) Blue 6, Black 6, Black 8
(e) Red 1, Red 2, Red 3, Red 4, Red 5, Red 6, Red 7, Red 8, Green 1, Green 4, Blue 4, Black 4 (12 cards)
(f) Green 1, Green 2, Green 3
(g) Green 1, Green 2, Green 3, Green 4, Green 5, Green 6, Green 7, Green 8, Red 1, Red 2, Red 3, Blue 3, Black 2 (13 cards)
