

# Ch. 2 Review Key

2.1

1. Days of the week that start with "T"
2. Natural numbers less than or equal to 10.
3.  $\{m, i, s\}$
4.  $\{8, 9, 10, 11, 12\}$
5.  $\{1, 2, 3, \dots, 30\}$
6. Not empty
7. Empty
8.  $\in$
9.  $\notin$  ( $\{d\}$  is its own set, not an element)
10.  $n(A) = 12$
11.  $n(B) = 15$
12.  $\neq$
13.  $\neq$
14. equivalent
15. both
16. Finite
17. Infinite

2.2

18.  $\subseteq$
19.  $\not\subseteq$
20.  $\subseteq$
21.  $\subseteq$  (Not proper because they are equal (you don't include repeated elements))
22.  $\subset$  (proper, not equal)
23. False, Texas not listed
24. False, the 4 needs brackets
25. True
27. True

2.3

33.  $A \cap B = \{1, 2, 4\}$

34.  $A \cup B' = \{1, 2, 3, 4, 6, 7, 8\}$

36.  $(A \cup B)' = \{6, 7, 8\}$

38.  $\{4, 5, 6\}$

39.  $\{2, 3, 6, 7\}$

40.  $\{1, 4, 5, 6, 8, 9\}$

41.  $\{4, 5\}$

42.  $\{1, 2, 3, 6, 7, 8, 9\}$

46.  $25 + 17 - 9 = 33$

2.4

47.  $B \cap C = \{1, 5\}$

$A \cup (B \cap C) = \{1, 2, 3, 4, 5\}$

48.  $(A \cap C) = \{1\}$

$(A \cap C)' = \{2, 3, 4, 5, 6, 7, 8\}$

$(A \cap C)' \cup B = \{1, 2, 3, 4, 5, 6, 7, 8\}$

49.  $\{c, d, e, f, k, p, r\}$

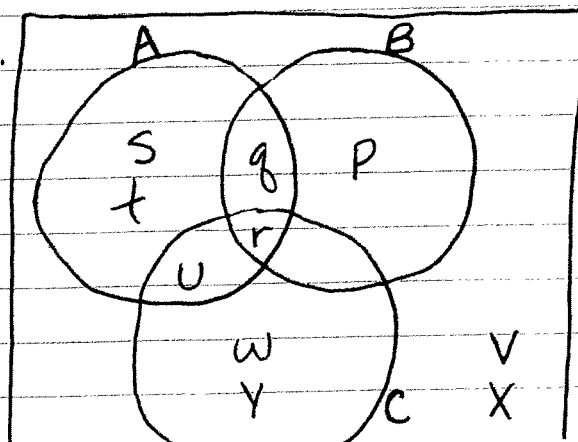
50.  $\{f, p\}$

51.  $\{c, d, f, k, p, r\}$

53.  $\{a, b, c, d, e, g, h, p, r\}$

54.  $\{f\}$

55.



58. Section V is countries that satisfy all 3 conditions  
 illiteracy less than 5%  
 working more than 50%  
 college more than 50%

V = US, Norway, Iceland

IV = Italy (Has more than 50% college and less than 5% illiteracy)

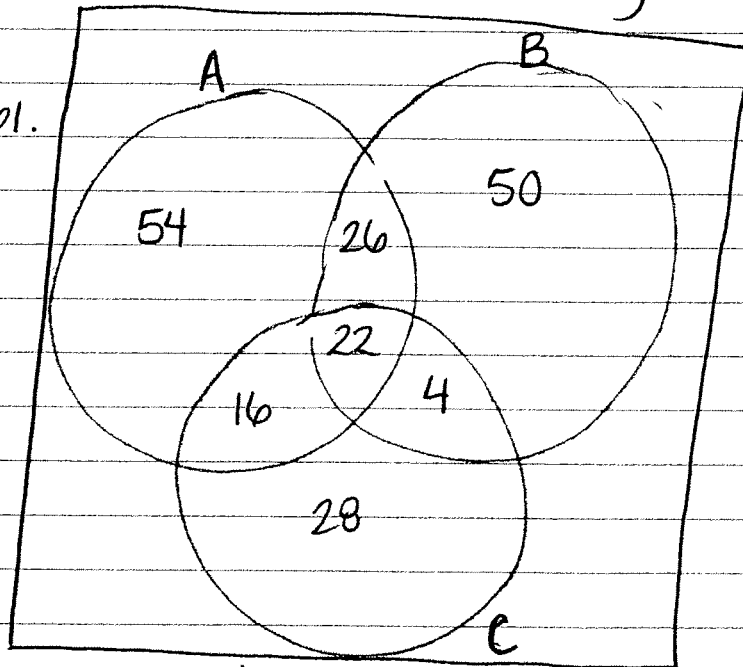
I = Mexico (only has 50% college)

VIII = Turkey, Pakistan (Satisfy none of the conditions)

II, III, VI, VII are empty

2.5

61.



A = Cars  
 B = Public  
 C = Bikes

a) Only Public =  $\boxed{50}$

b)  $(A \cap B) \cap C = \boxed{26}$

c)  $(A \cup B) \cap C = 54 + 26 + 50 = \boxed{130}$

d)  $26 + 16 + 4 = \boxed{46}$

e)  $\boxed{0}$  (#s add to 200)

