

Name:

Class:

Date:

Mathematics

Sets: Subsets and Venn Diagrams

Answer each of the questions given below.

1) Write out all the possible subsets that can be made from the following sets:(a) $J = \{h\}$

Possible subsets:

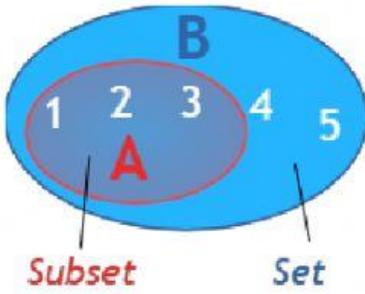
(b) $Q = \{11, 12\}$

Possible subsets:

2) How many elements and possible subsets are there in each of the sets below?

(Write out the elements in order where necessary!)

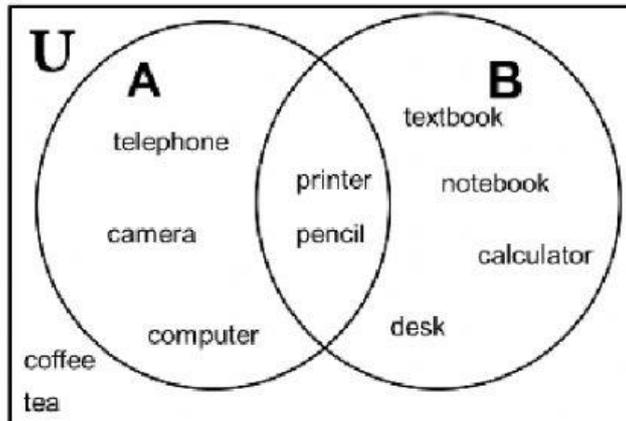
(a) $B = \{\}$ $n(B) =$ No. of possible subsets in $B = 2^{\quad} =$ subsets.(b) $R = \{7\}$ $n(R) =$ No. of possible subsets in $R = 2^{\quad} =$ subsets.(c) $A = \{\text{vowels in the English alphabet}\} = \{ \quad \}$ $n(A) =$ No. of possible subsets in $A = 2^{\quad} =$ subsets.



(d) $S = \{\text{Factors of } 24\} = \{ \quad \quad \quad \}$

$n(S) = \quad \quad \quad$ No. of possible subsets in $S = 2^{\quad} = \quad \quad$ subsets.

3.) Use the Venn diagram below to answer the problems that proceed after it.



List all the elements (in alphabetical order) that are found in:

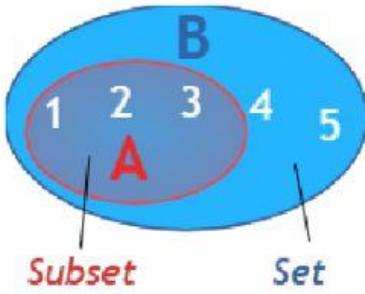
(a) $A \cup B = \{ \quad \quad \quad \}$

(b) $A \cap B = \{ \quad \quad \quad \}$

(c) $A' = \{ \quad \quad \quad \}$

(d) B only = $\{ \quad \quad \quad \}$

(e) $(A \cup B)' = \{ \quad \quad \quad \}$



(f) $(A \cap B)' = \{ \quad \quad \quad \}$

How many elements are found in each given below?

(g) $n(U) = \quad$ elements.

(h) $n(A \cup B) = \quad$ elements.

(i) $n(A \cup B)' = \quad$ elements.

State the number of possible subsets in

(j) $A \cap B: \quad ^\wedge = \quad = \quad$ subsets.

(k) B only: $\quad ^\wedge = \quad = \quad$ subsets.

(l) $(A \cap B)': \quad ^\wedge = \quad = \quad$ subsets.

(e.g, if $M = \{70, 80, 90\}$ then, the no. of possible subsets in M is: $2^3 = 2 \times 2 \times 2 = 8$ subsets.)