HW 12

Wednesday, March 1, 2023 10:25 AM

1. Given the universal set

$U = \{a, b, c, d, e, f, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$

let $A = \{a, b\}$, $B = \{a, c, 2, 4, 6\}$, $C = \{1, 2, 3, 4\}$ and $D = \emptyset$.

Evaluate each expression:

a) $|D|$

b) $D \in A$

c) $\overline{B}$

d) $A \cap B$

e) $(U - B) \cup C$

f) $C \subseteq B$

a) 0

b) FALSE

c) b,d,e,f,1,3,5

d) a

e) b,d,e,f,1,2,3,4,5

f) FALSE

7. Given the universal set:

$U = \{a, b, c, d, e, f, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$

let $A = \{a,b\}$, $B=\{a,c,2,4,6\}$, $C= \{1,2,3,4\}$ and $D=\emptyset$.

Evaluate each expression:

a) $A \times B$

b) the relation on $A \times C$ in which the second element of the ordered pairs is larger than 3.

c) $|A \times B \times C|$

d) $C \times D \subseteq A \times B$

a) {(a,a),(a,c),(a,2)(a,4)(a,6), (b,a),(b,c),(b,2)(b,4)(b,6)}

b) {(a,4),(b,4)}

c) 2 * 5 * 4 = 40

d) TRUE??

C x D = 1 = {()}

A x B = 2 = {(a,a),(a,c),(a,2)(a,4)(a,6), (b,a),(b,c),(b,2)(b,4)(b,6)}

$1 \subseteq 2$ = TRUE