LRA COYHAIQUE TEORIA DE CONJUNTOS NOMBRE

PROFESOR HECTOR MEDINA GUÍA EJERCICIO N° 2 CURSO 4° B TP

FUENTE: INSTITUTO NACIONAL

**A. Descripción de conjuntos y clasificación**

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| 1.- | Si *U* = *a*, *b*, *c* , …, *y* , *z* entonces el conjunto *D* descrito por extensión | | | | | | | |
|  | *D* = |  | *x* ∈*U* / " *x* " *es vocal de la palabra* | | | | |  |
|  |  | "*canotaje*" es: |
|  | A) *c*, *a* , *n*, *o*, *t* , *j* , *e* | | | | B) *a* , *o*, *e* | | C) *c* , *a* , *n*, *o*, *t* , *a* , *j* , *e* | |
|  | D) *x* ∈*U* / | | | *x es vocal*  | | E) *a* , *o*, *a* , *e* | |  |
| 2.- | El conjunto *D* = *n* ∈ | | | | / " *n* "*es múltiplo de* 3 , 7 < *n* ≤ 19  descrito | | | |
|  | por extensión es: | | | |  |  |  |  |
|  | A)  3, 6, 9, 12, 15, 18,19  B)  8, 9, 12, 15, 18, 19  | | | | | | | |
|  | C) 9, 12, 15, 18,19  | | | | D)  9, 12, 15,18 | | | E)  9, 12, 15, 18… |
| 3.- | El conjunto | | | *A* =7, 9, 11, 13 | | descrito por comprensión es: | | |

1. *n* ∈/ " *n* " *número primo*, 7≤ *n* ≤13
2. *n* ∈/ " *n* " *es impar* , *n* ≥7
3. *n* ∈/ " *n* " *es par* , 6< *n* <13
4. *n* ∈/ " *n* " *es impar* , 7≤ *n* <14
5. *n* ∈/ " *n* " *número primo*, 7< *n* <13

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| 4.- | Si U = { 6, 9, 12, 15, 18, ...} entonces la descripción por extensión del | | | | |
|  | conjunto | A = { n∈U / “n” es divisor de 18 } es: | |  |  |
|  | A) { 3, 6, 9, 12, 15, 18, ...} | | B){1,2,3,6,9,18} | C){6,9,18 | } |
|  |  | D) { 18, 18(2), 18(3), 18(4) } | | E){1,6,12,18} |  |
| 5.- | Si U = { 11, 12, 13,..., 19} y | | A = { n∈N / “n” es múltiplo de 4 y n ≤ 17 | | } |
|  | entonces la descripción de A por extensión es: | | |  |  |

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|  |  |  |  |  |  |  |  |  |  |  |  | Ejercicios de Teoría de Conjuntos | | | | |
|  | A){1,2,4} | | | | | | | |  | B){4,8,12,16} | | |  |  |  | C){12,16} |
|  |  |  |  | D) { 4,8,12,16,17 } | | | | | | |  | E) { 8, 12, 14, 16 } | | | | |
| 6.- | El conjunto {–1, 0, 1, 2, 3, 4} expresado por comprensión es: | | | | | | | | | | | | | | | |
|  |  |  | *n* | ∈ |  |  |  | *n* divisor |  |  |  |  |  |  |  |  |
|  | A) |  |  |  |  | natural de 12 | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
|  | B) |  | *n* | ∈ | |  |  | − 2 < *n* < | 5 |  |  | C) |  | *n* ∈ |  | − 2 < *n* < 5 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
|  | D) |  | *n* | ∈ | | | | − 1 ≤ *n* ≤ | 4 |  |  | E) |  | *n* ∈ |  | *n* ≤4 |
| 7.- | Si |  | *U* =4,5,6,7,8,9,10 | | | | | | | | entonces | |  | el | conjunto | |
|  | A = { n∈*U* “n” es par , | | | | | | | | 6 < n ≤ 14 } | | expresado por extensión es: | | | | | |
|  | A) | 6,8,10,12,14 | | | | | | |  | B) 6,8,10 | | C) 2, 4,6,8,10,12,14 | | | | |
|  | D) | 8,10,12,14 | | | | | | |  | E) 8,10 | |  |  |  |  |  |
| 8.- | Si U={8, 10, 12, ..., 20 } la descripción por extensión del conjunto A={n∈U | | | | | | | | | | | | | | | | |
|  | 12≤n<18} es: | | | | | | | |  |  |  |  |  |  |  |  |
|  | A) {12, 13, 14, 15, 16, 17, 18} | | | | | | | | | | B) {12, 13, 14, 15, 16, 17} | | | | | |
|  | C) {12, 14, 16, 18} | | | | | | | |  | D) {12, 14, 16} | | |  | E) {13, 14, 15, 16, 17, 18} | | |
| 9.- | El conjunto | | | | | |  | { -1, 2, 5, 8, 11, 14, 17,... } escrito por comprensión es: | | | | | | | | |
|  | A) { -1, 2, 5, 8, 11, 14, 17, ...} | | | | | | | | | | B) { n∈Ζ -1 ≤ n <20, “n” impar } | | | | | |
|  | C) { n∈Ζ n ≤ 17 } | | | | | | | |  |  | D) { n∈Ζ -1 ≤ n, “n” impar } | | | | | |
|  | E) { 3n+2 n= -1, 0, 1, 2,3, ...} | | | | | | | | | |  |  |  |  |  |  |
| 10.- | Los elementos del conjunto { x -3 ≤ x < 2 , “x” número entero } son : | | | | | | | | | | | | | | | |
|  | A){0,1,2} | | | | | | | |  | B) { -3, -2, -1, 0, 1, 2 } | | | | |  | C){1,2} |
|  | D){-2,-1,0,1,2} | | | | | | | |  |  | E) { -3, -2, -1, 0, 1 } | | | | | |
| 11.- | Si |  | *U* =4,6,8,...,18 | | | | | | | y tenemos | | que *S* = 8,12,16 entonces la | | | | |
|  | descripción | | | | | |  | de “S” por comprensión es: | | | |  |  |  |  |  |
|  | A) { n∈U 6 ≤ n ≤ 18 } | | | | | | | | |  | B) { n∈U “n” es múltiplo de 4, n ≥ 6 } | | | | | |

1. { n∈U “n” es par , 6< n <18 } D) { n∈U 8 ≤ n ≤ 16 }
2. { n∈U ”n” es múltiplo de 4 }

**B. Cardinalidad, conjuntos equivalentes y subconjuntos**

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| --- | --- | --- | --- | --- | --- | --- | --- |
| 12.- | Si K = { x x es una letra de la palabra “correcto” } | | | | la cardinalidad de K | | es: |
|  | A) 4 | B) 8 | C) 5 | | D) 6 | E) 7 |  |
| 13.- | Si ***U*** = {0, 1, 2, 3, 4, 5}, y sean los conjuntos ***A*** = {1, 2, 3}, | | | | | ***B*** = {0, 1, 2}, | |
|  | ***C*** ={0}. ¿Cuál de las siguientes afirmaciones es correcta? | | | | |  |  |
|  | A)***C***⊂***B*** |  | B)***B***⊂***A*** | | C) ***A***⊂***B*** | |  |
|  | D)∅⊄***B*** |  | E)***C***⊂***A*** | |  |  |  |
| 14.- | Sean | los | conjuntos | *A* = *x* / | *x es vocal*  | | y |
|  | *B* =*y* / | *y es par* , | 0 < *y* < 49 . El valor de *n*  *A*  | | | *y n*  *B*es: |  |
|  | *n*  *A*5 | | *n*  *A*3 | | *n*  *A*3 | |  |
|  | A) *n*  *B*49 | | B) *n*  *B*48 | | C) *n*  *B*24 | |  |
|  | D) | *n*  *A*5 | E) | *n*  *A*5 |  |  |  |
|  | *n*  *B*50 | *n*  *B*24 |  |  |  |

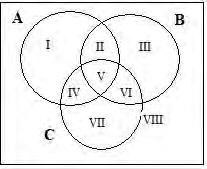
15.- Si dos conjuntos tienen la misma cardinalidad entonces se llaman conjunto equivalentes, por lo tanto de los conjuntos:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (a) *a* , *e*, *i*, *o*, *u* | | |  | (b) *n* ∈ | | / 2 ≤ *n* < 8 | |  |
|  | (c)  x es día de la semana  | | | | (d) m∈ | | /“m” es divisor de 12 | | |
|  | Los que son equivalentes son: | | | |  |  |  |  |  |
|  | A) b y c | | B) b y d | | C) a y d | |  | D) c y d | E) a y b |
| 16.- | Si | *U* =*a* , *b*, *c*, *d* , *e*, *f* , *g* , *h*y | | | | los | subconjuntos | | *A* =*b*, *c*, *d*, |
|  | *B* =*d* , *e*, *f* , *g* | | | y *C* = *b*, *c* , *d* , *e*, | | *f* , *g* , *h* | | determina ¿cuál de las | |
|  | siguientes | | proposiciones es falsa: | | |  |  |  |  |
|  | A) *A*⊂*B* | | B) *A*⊂*C*C) *B*⊂*C* D)*C*⊄*B*E) *C*⊄∅ | | | | | | |
| 17.- | Si |  | *U* =0,1, 2,3, 4,5, 6, 7,8,9 | | | | | y los | subconjuntos |
|  | *A* =1, 2,3, | | | *B*=2, 3, 4, 5 | |  | y | *C*=1,2,3,4,5,6 | |
|  | determina ¿cuál de las siguientes | | | | proposiciones es falsa: | | | |  |
|  | A) *A*⊂*C*B) *A*⊂*B*C)*C*⊄*B* | | | | | | D)∅⊂*B* E) *C*⊄*A* | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 18.- | Si | *A* =1,2,3,4,5,6 | el número de subconjuntos de A es: | |  |
|  | A) 6 | B) 66 | C) 26 | D) 36 | E) 63 |

19.- Si U={1,2,3,...,12,13} y los subconjuntos A={1,2,7,8,10,11}, B={3,5,6,7,8,11,12} y C={2,4,5,8,9,11,12}, entonces al distribuir los elementos en un diagrama de Vehn los elementos que se encuentran en las regiones {II,IV,VI} son:

A) {1,2,6,8,11}



B) {2,6,8,11}

C) {1,2,7,5,12}

D) { 2,5,7,12 }

E) {2,5,7,9}

**C. Operaciones con conjuntos**

20.- Sean los conjuntos ***A*** = { 1, 2, 3 }; ***B*** = { 2, 3, 4 }, ***D*** = { 4, 5 }, determina la cardinalidad de  ***A***∪ ***B***  ∪ ***D***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | A) 8 | B) 5 | C) 6 | D) 0 | E) 7 |
| 21.- | A | partir de los | conjuntos | *A* =3,5,6,7, *B* =5,7,8,9, | |

1. = 1, 2,3, 5, 9 realice la siguiente operación:  *A* ∩*C*  ∪ *B* :

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | A) 1, 2,3, 5, 7, 9 | B) 3, 5,9 | | C) 3,5,7,8,9 | |
|  | D) 5,7,8,9 | E) 5, 7, 9 | |  |  |
| 22.- | Encuentre dos conjuntos cuya intersección es | | | | 4, 5 y cuya unión es |
|  | *A* =1,2,3,4,5,6: |  |  |  |  |
|  | A) 1, 2,3, 4 ; 4,5,6 |  | B) 1, 2,3 | | ; 4,5,6 |
|  | C) 1,2,3, 4,5,6 ; *φ* | | D) 1, 2,3, 4,5 ; 4,5,6 | | |
|  | E) 2,3, 4,5,6 ; 1, 4,5,6 | |  |  |  |