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|  | Nombres: Luis Felipe Arias, Lina María Sánchez Mina, | |
| Fecha: 19 de marzo | Ciclo: 3 |
| **Desarrollo de Software** | |
| **Ejercicios sobre árboles binarios** | |

1. Para el siguiente árbol binario:

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|  | Presente:   1. Peso: **11** 2. Altura:**5** 3. Hojas**:** **74,81,57,50,39** 4. Una rama: **55,48,33,76,78**   Recorrido en inorden: **39,33,48,50,55,57,64,74,76,78,81**   1. Recorrido en preorden: **64,55,48,33,39,50,57,76,74,78,81**      1. Recorrido en postorden:   **39,33,50,48,55,57,74,76,78,81,64** |

1. Para el siguiente árbol binario:

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| Recorrido de árboles - Wikipedia, la enciclopedia libre | Indique:   1. Altura: **4**      1. Número de niveles: 4 2. Ancestro común de la E y la A: **B** 3. Peso del árbol izquierdo de la F: **3** 4. Recorrido en inorden **C,D,E,B,A,F,G,I,H** 5. Recorrido en preorden**: F,B,A,D,C,E,G,I,H** 6. Recorrido en postorden: **A,C,E,D,B,H,I,G,F** 7. Recorrido por niveles**: 4** 8. Hojas: **A,C,E,H,** |

1. Reconstruya el árbol binario que posee los siguientes recorridos:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Preorden: 1 – 2 – 3 – 4 – 5 – 6 – 7  Inorden: 3 – 2 – 5 – 4 – 1 – 6 - 7 | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  | 3 | 2 | 5 | 4 | 1 | 6 | 7 | | 1 |  |  |  |  | X |  |  | | 2 |  | X |  |  |  |  |  | | 3 | X |  |  |  |  |  |  | | 4 |  |  |  | X |  |  |  | | 5 |  |  | X |  |  |  |  | | 6 |  |  |  |  |  | X |  | | 7 |  |  |  |  |  |  | X | |

1. Reconstruya el árbol binario que posee los siguientes recorridos:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Postorden: A – C – E – D – B – H – I – G – F  Inorden: A – B – C – D – E – F – G – H – I | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | A | B | C | D | E | F | G | H | I | | F |  |  |  |  |  | X |  |  |  | | G |  |  |  |  |  |  | X |  |  | | I |  |  |  |  |  |  |  |  | X | | H |  |  |  |  |  |  |  | X |  | | B |  | X |  |  |  |  |  |  |  | | D |  |  |  | X |  |  |  |  |  | | E |  |  |  |  | X |  |  |  |  | | C |  |  | X |  |  |  |  |  |  | | A | X |  |  |  |  |  |  |  |  | |

1. Reconstruya el árbol binario que posee los siguientes recorridos:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| Preorden: 59 – 37 – 28 – 16 – 43 – 48 – 74 – 80 – 79  Inorden: 16 – 28 – 37 – 43 – 48 – 59 – 74 – 79 – 80 | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | 16 | 28 | 37 | 43 | 48 | 59 | 74 | 79 | 80 | | 80 |  |  |  |  |  |  |  |  | X | | 79 |  |  |  |  |  |  |  | X |  | | 74 |  |  |  |  |  |  | X |  |  | | 59 |  |  |  |  |  | X |  |  |  | | 48 |  |  |  |  | X |  |  |  |  | | 43 |  |  |  | X |  |  |  |  |  | | 37 |  |  | X |  |  |  |  |  |  | | 28 |  | X |  |  |  |  |  |  |  | | 16 | X |  |  |  |  |  |  |  |  | |