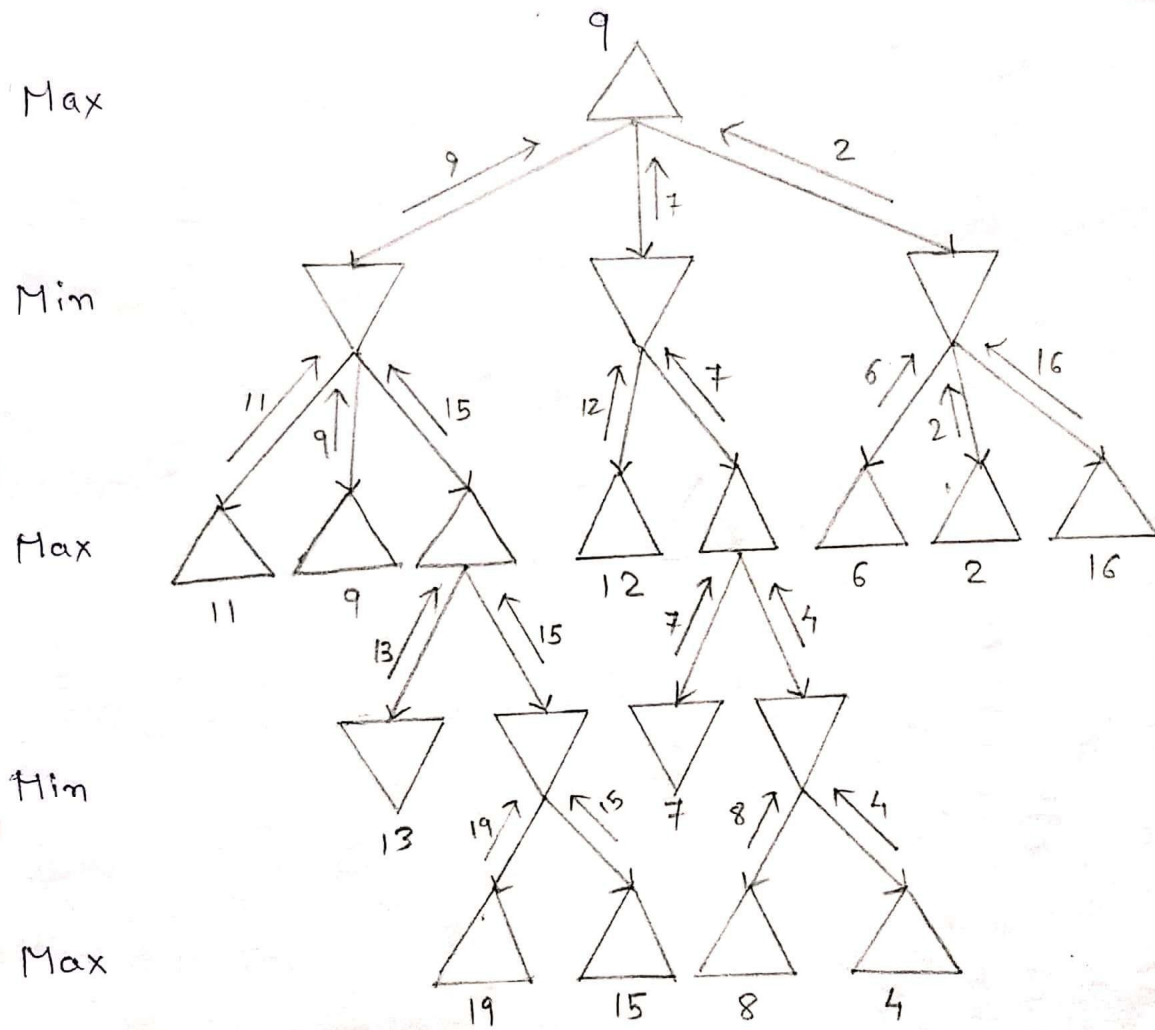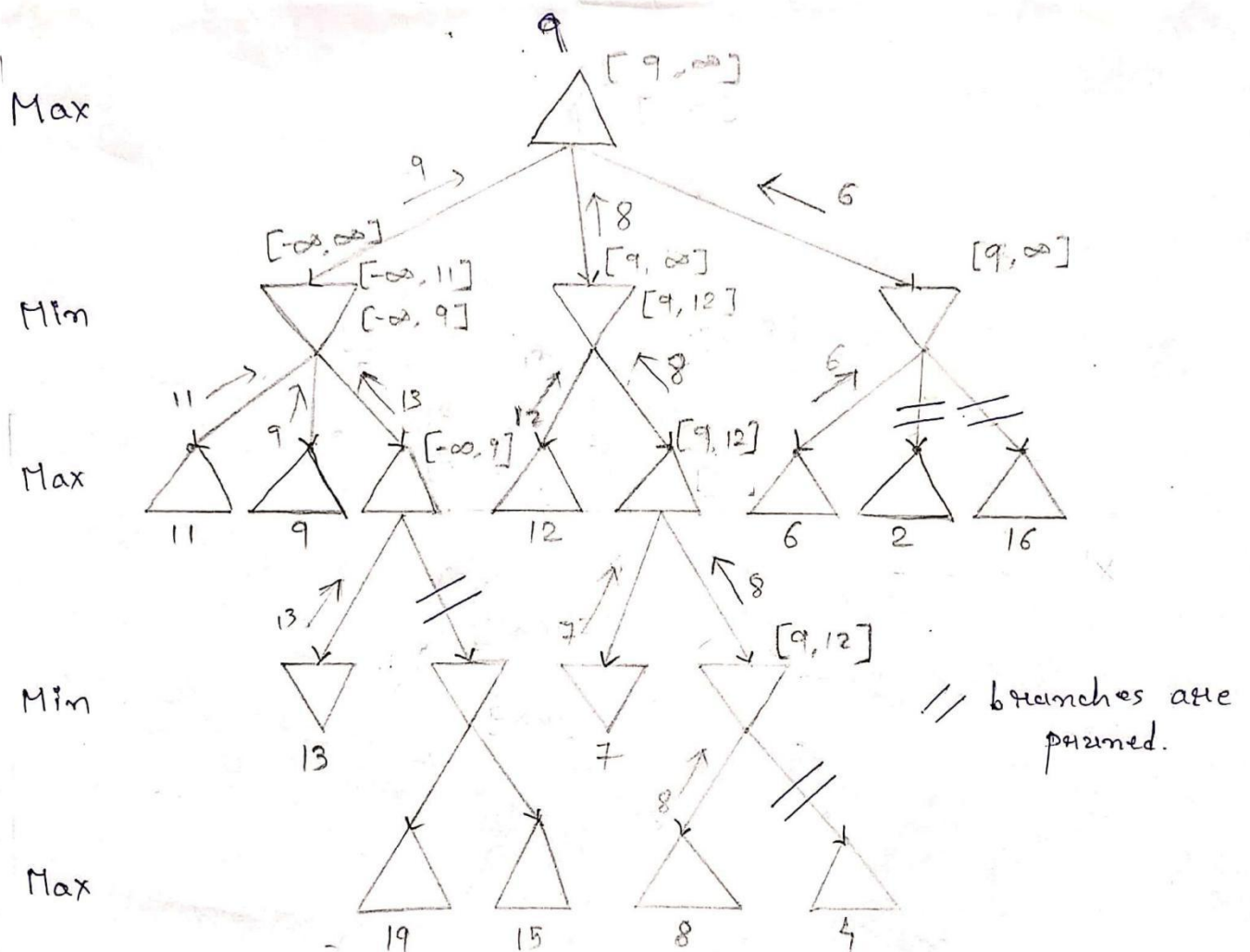# CS 480 - Introduction of Artificial Intelligence
Written Assignment 2

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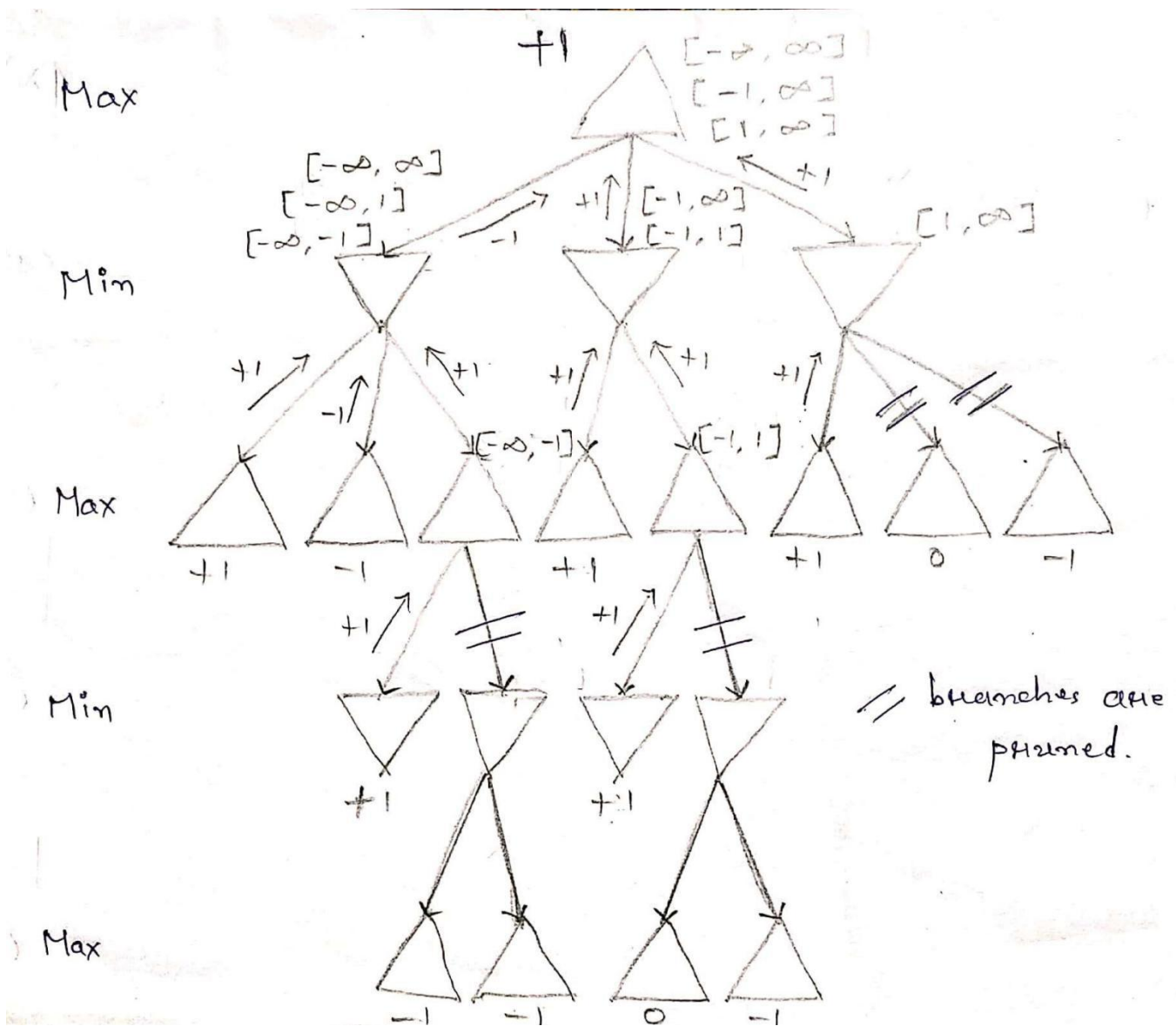
Answer - 1

Answer - 2

Answer - 3

Max

$+1$ $[-\infty, \infty]$
     $[-1, \infty]$
     $[1, \infty]$

Min

$[-\infty, \infty]$
$[-\infty, 1]$
$[-\infty, -1]$ -1 $+1$ $[-1, \infty]$ $+1$
     $[-1, 1]$ $[1, \infty]$

Max

$+1$ -1 $+1$ $+1$ $+1$ $[-\infty, -1]$ $[-1, 1]$

$+1$ -1 $+1$ $+1$ 0 -1

$+1$ $+1$

Min

$+1$ $+1$

$=$ branches are pruned.

Max

-1 -1 0 -1

Answer - 4

Max
+1 [-1, +1]
    [+1, +1]

-1 →

↑+1

[-1, +1]

Min

[-1, +1]
[-1, -1]

+1 →

-1↗

[-1, +1]

+1↗

↑+1

[-1, +1]
[+1, +1]

Max

+1   -1   +1   +1   0   -1

+1↗

Min

+1   +1

// branches are pruned.
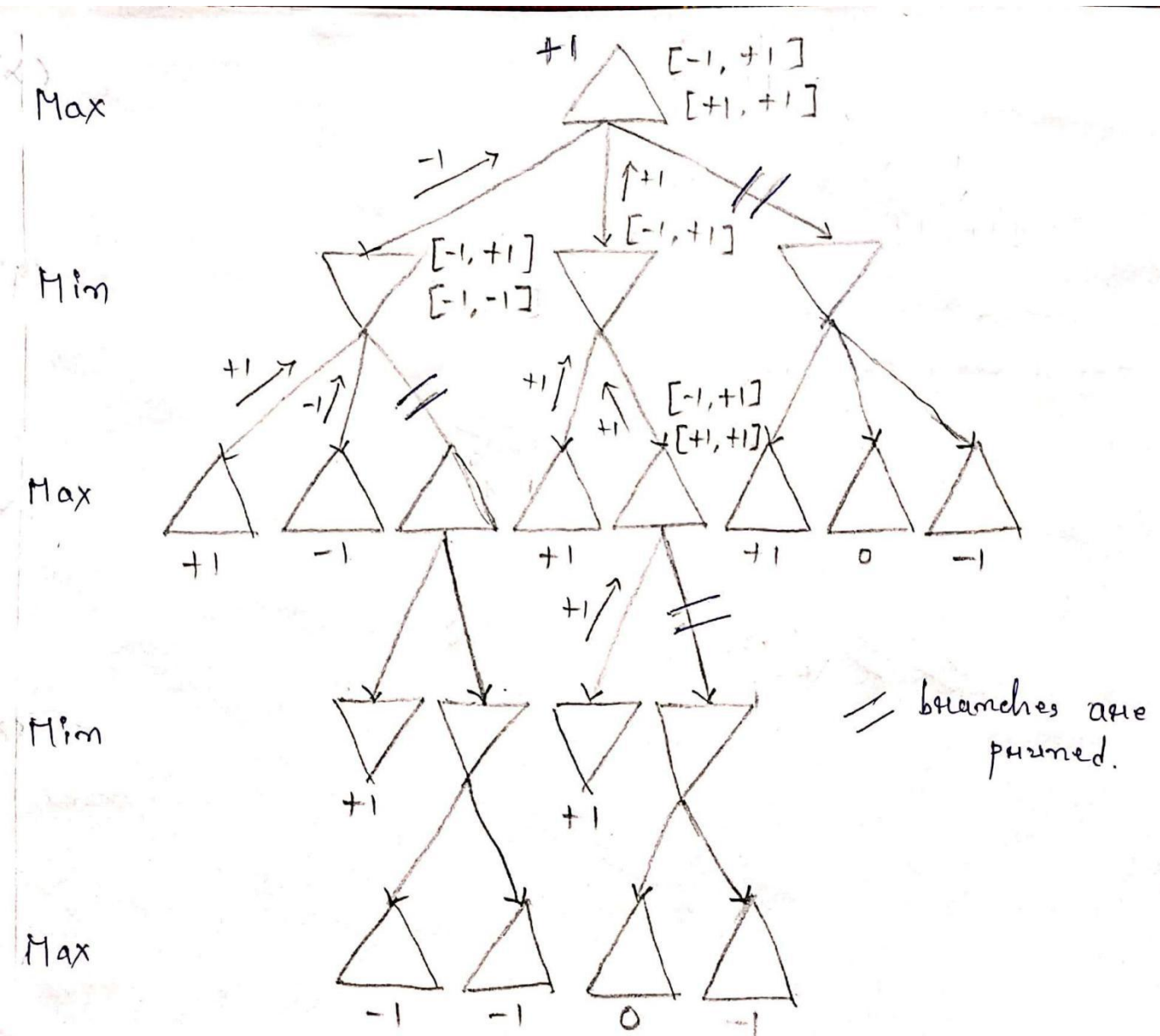
Max

-1   -1   0   -1

The Variables and domains given -
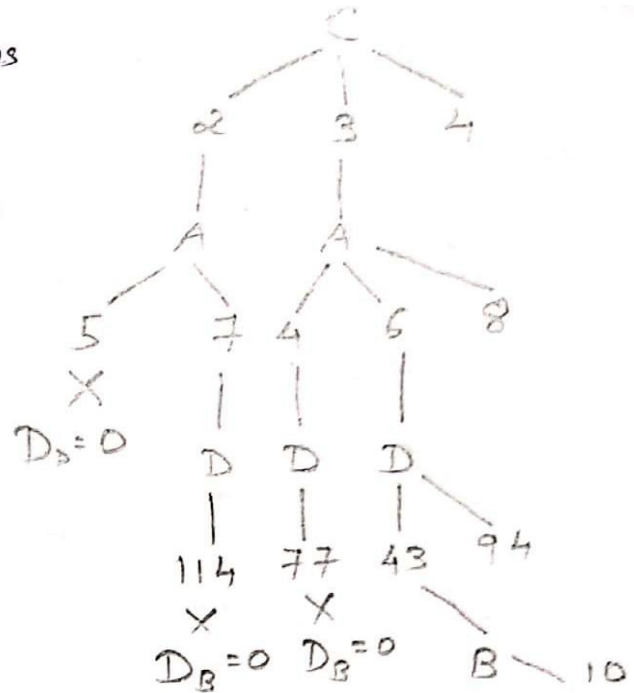
$A : \{4, 5, 6, 7, 8\}$

$B : \{10, 20, 30, 40\}$

$C : \{2, 3, 4\}$

$D : \{28, 43, 56, 77, 94, 114\}$

Constraints :

$A + C$ is odd.

$A + D$ is square of an integer

$B + D < 60$

	$C = 2$	$A = 5$	$A = 7$
$A : \{4, 5, 6, 7\}$	$\{5, 7\}$	5	7
$B : \{10, 20, 30, 40\}$	$\{10, 20, 30, 40\}$	$\{10, 20, 30, 40\}$	$\{10, 20, 30, 40\}$
$C : \{2, 3, 4\}$	2	2	2
$D : \{28, 43, 56, 77, 94, 114\}$	$\{28, 43, 56, 77, 94, 114\}$	$\times$	114

$D = 114$	$C = 3$	$A = 4$	$D = 77$
$A : 7$	$\{4, 6, 8\}$	4	4
$B : \times$	$\{10, 20, 30, 40\}$	$\{10, 20, 30, 40\}$	$\times$
$C : 2$	3	3	3
$D : 114$	$\{28, 43, 56, 77, 94, 114\}$	$\{77\}$	77

$A = 6$	$D = 43$	$B = 10$	Solution :-
6	6	6	$A = 6$
$\{10, 20, 30, 40\}$	$\{10\}$	10	$B = 10$
3	3	3	$C = 3$
$\{43, 94\}$	43	43	$D = 43$