Entraînement - Training

INSTRUCTION : *English version below*

En haut de chaque page se trouvent 3 nombres, par exemple +1/3/58+. Vous ***devez*** *vérifier que, sur chacune des pages de votre sujet, le* ***premier*** *de ces 3 nombres est le même (dans cet exemple, il s'agit donc du 1). Ce nombre identifie votre copie. Les deux autres nombres ne sont pas importants.*

Détacher la dernière feuille et répondre dessus. Ne pas rendre les pages contenant les questions, vous ne devez rendre ***que la dernière feuille****. Chaque question est sur 1 point, aucun point ne sera attribué aux questions contenant une mauvaise réponse.*

Les questions faisant apparaître le symbole ♣ peuvent présenter une ou plusieurs bonnes réponses qui doivent toutes être cochées. Les autres ont une unique bonne réponse.

At the top of each page are written 3 numbers, +1/3/58+. You ***must*** *check that, on each page you have, the* ***first*** *number is the same (in this case, it would be the number 1). This number is the id of your subject. The two other numbers are not important.*

Answer only on the last page. Keep the other pages containing the questions, you just have to return ***the last page****. Each right answer gives you 1 point. For any wrong answer, the mark of the question is 0.*

If there is a question with a symbol ♣, there may be one or more right answer. All of them must be checked. Any other question has only one right answer.

Question 1

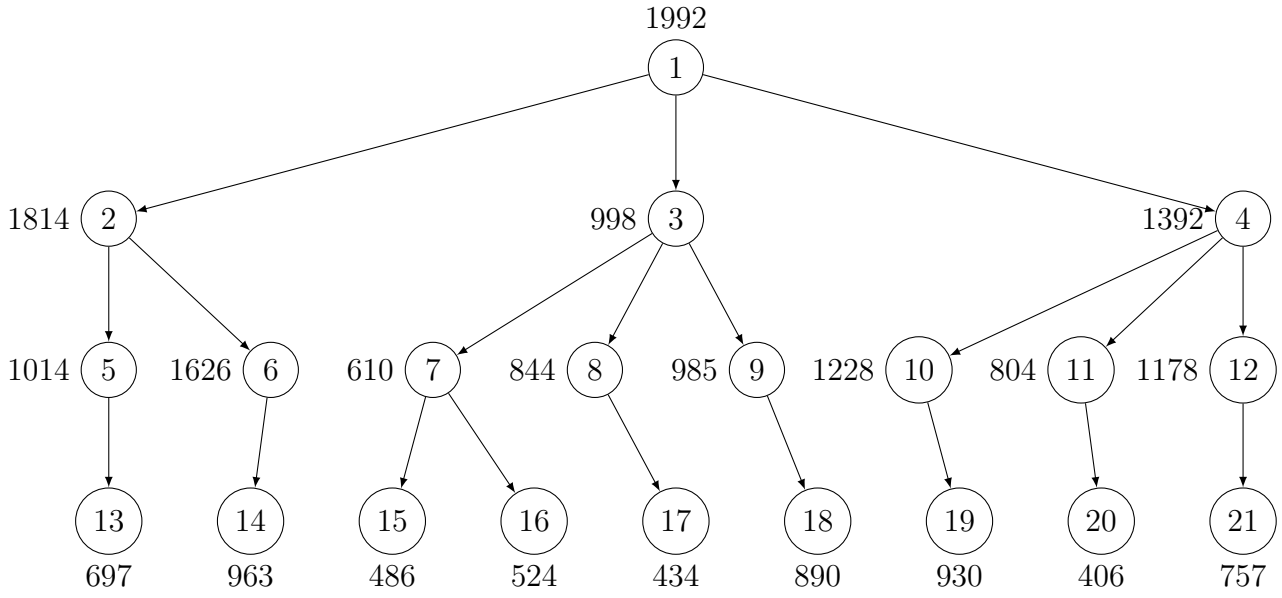
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 8-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



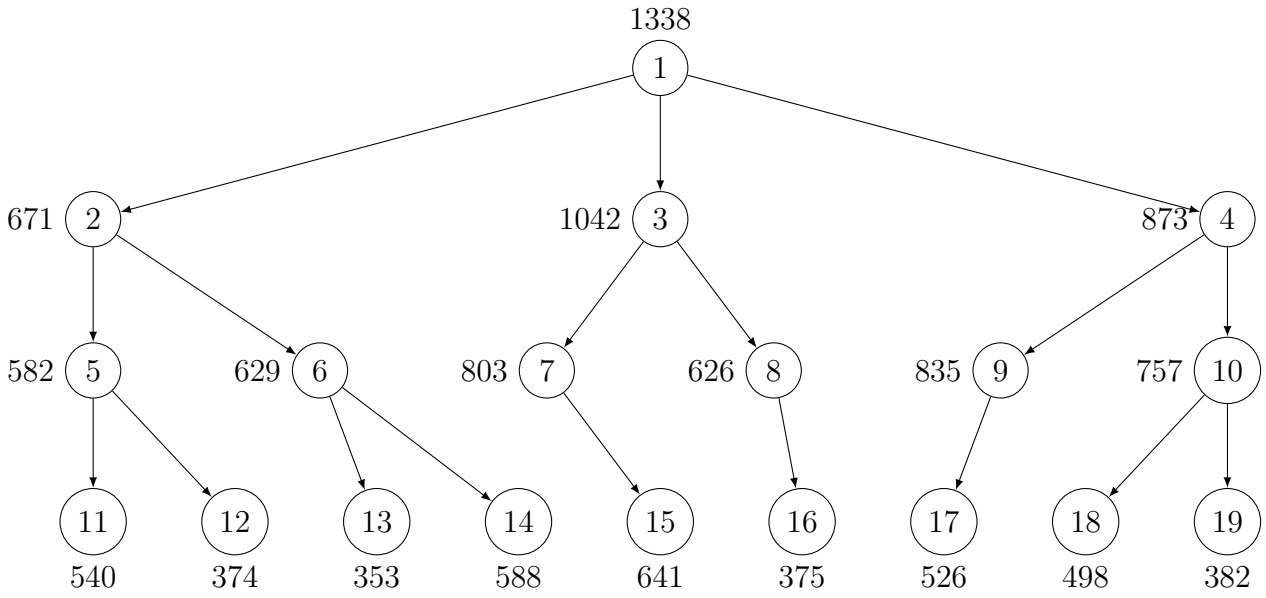
[1] 1	[4] 4	[7] 7	[10] 10	[13] 13	[16] 16	[19] 19
[2] 2	[5] 5	[8] 8	[11] 11	[14] 14	[17] 17	[20] 20
[3] 3	[6] 6	[9] 9	[12] 12	[15] 15	[18] 18	[21] 21

Question 2 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	

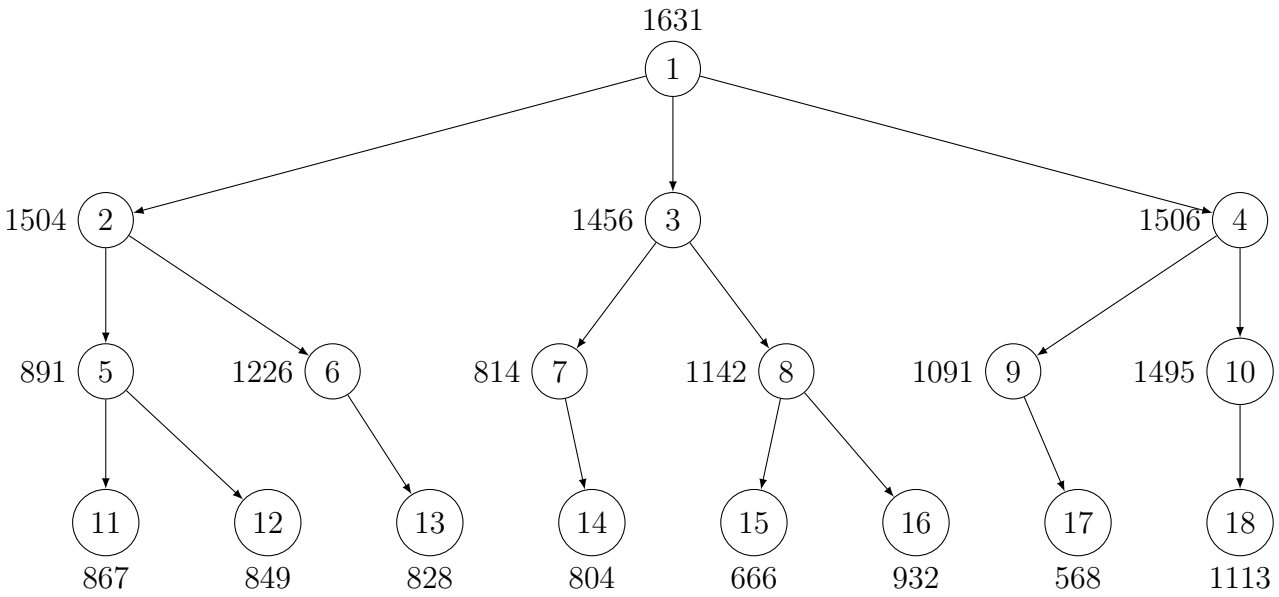
Question 3 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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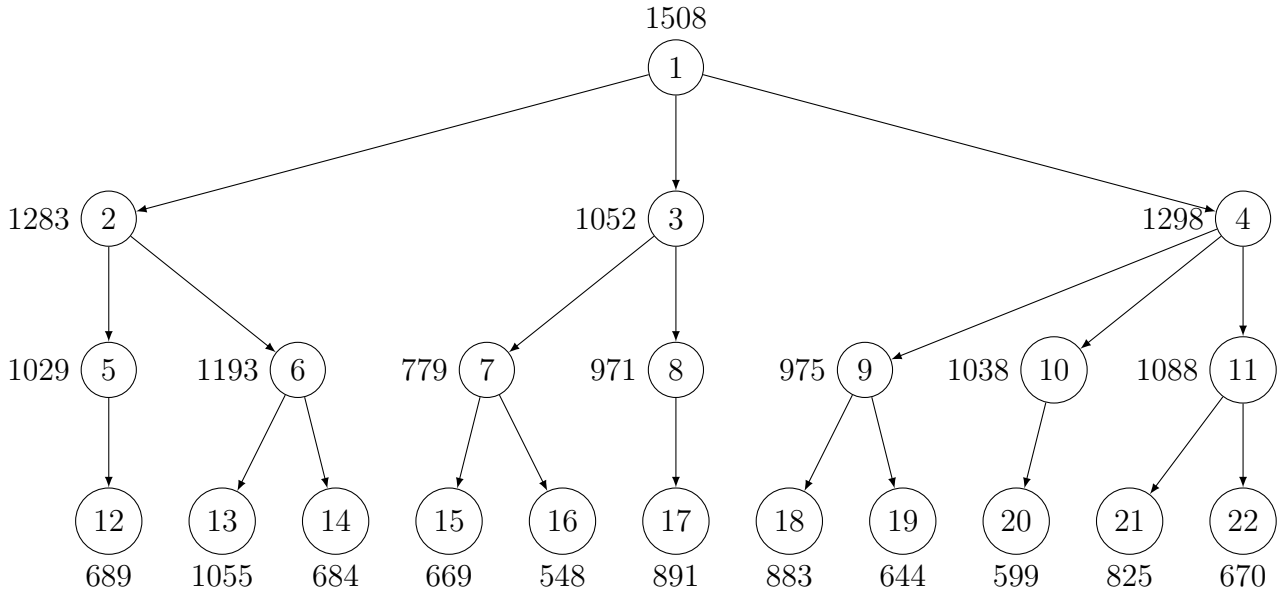
☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18

Question 4 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

- All the solutions are feasible
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 3	☐ 7	☐ 11	☐ 15	☐ 19	
☐ 4	☐ 8	☐ 12	☐ 16	☐ 20	☐ 22

Question 5

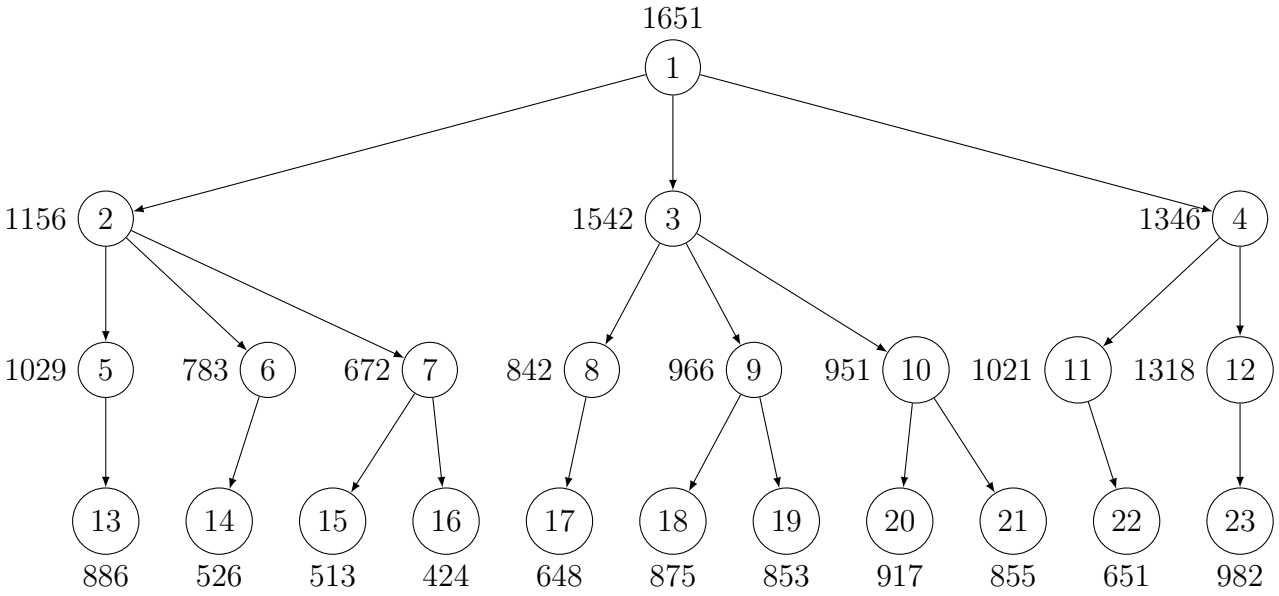
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 7-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



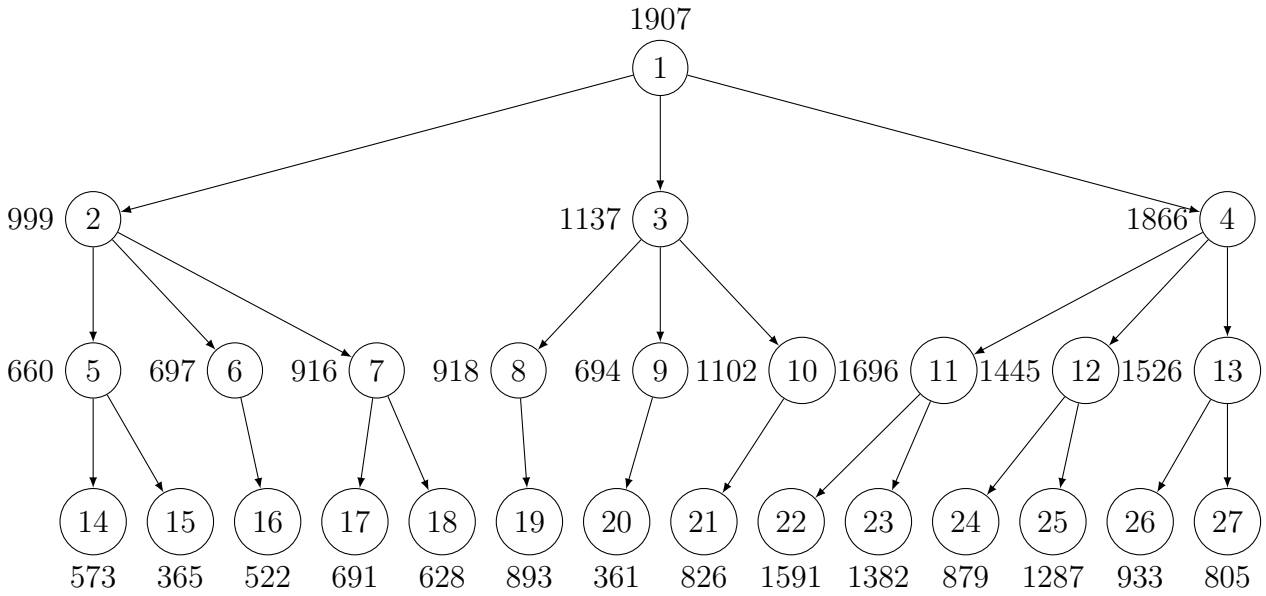
1 1	5 5	9 9	13 13	17 17	21 21
2 2	6 6	10 10	14 14	18 18	22 22
3 3	7 7	11 11	15 15	19 19	
4 4	8 8	12 12	16 16	20 20	23 23

Question 6 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 6	☐ 10	☐ 14	☐ 18	☐ 22	☐ 26
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☐ 4	☐ 8	☐ 12	☐ 16	☐ 20	☐ 24	☐ 27

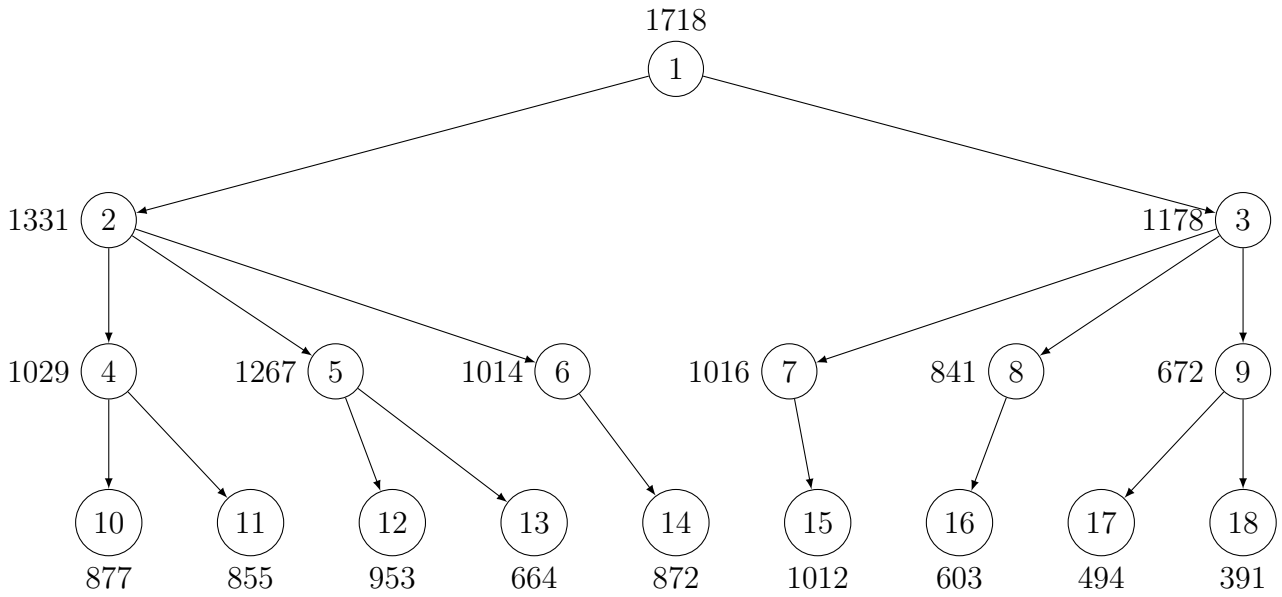
Question 7 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18

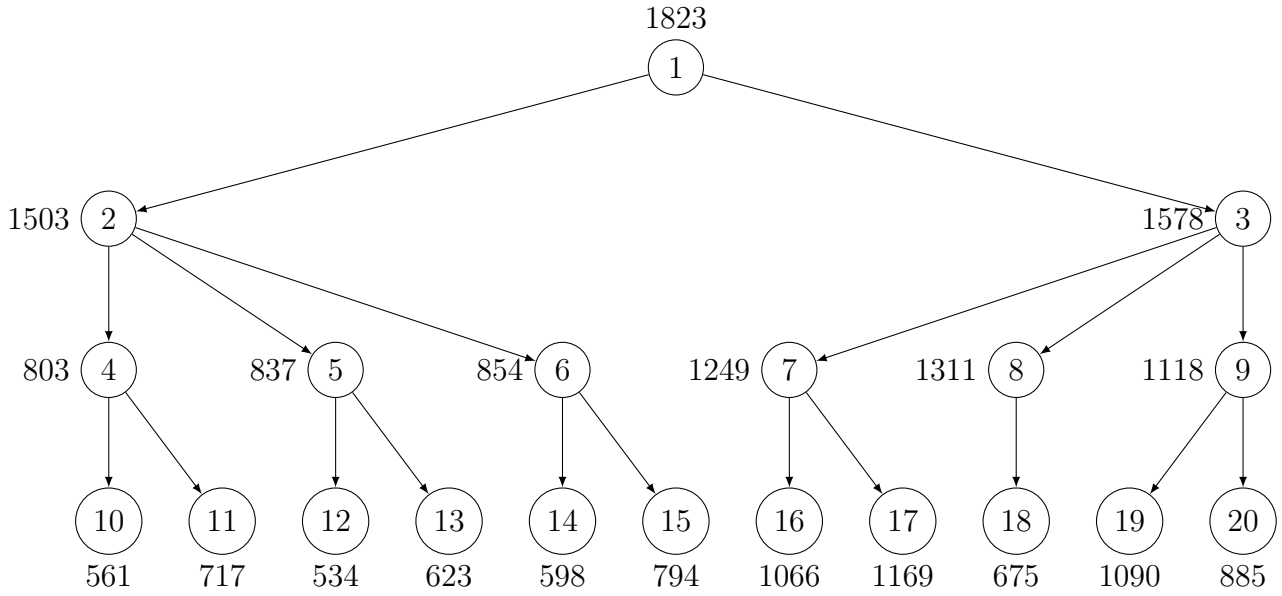
Question 8 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17	☐ 20
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	

Question 9

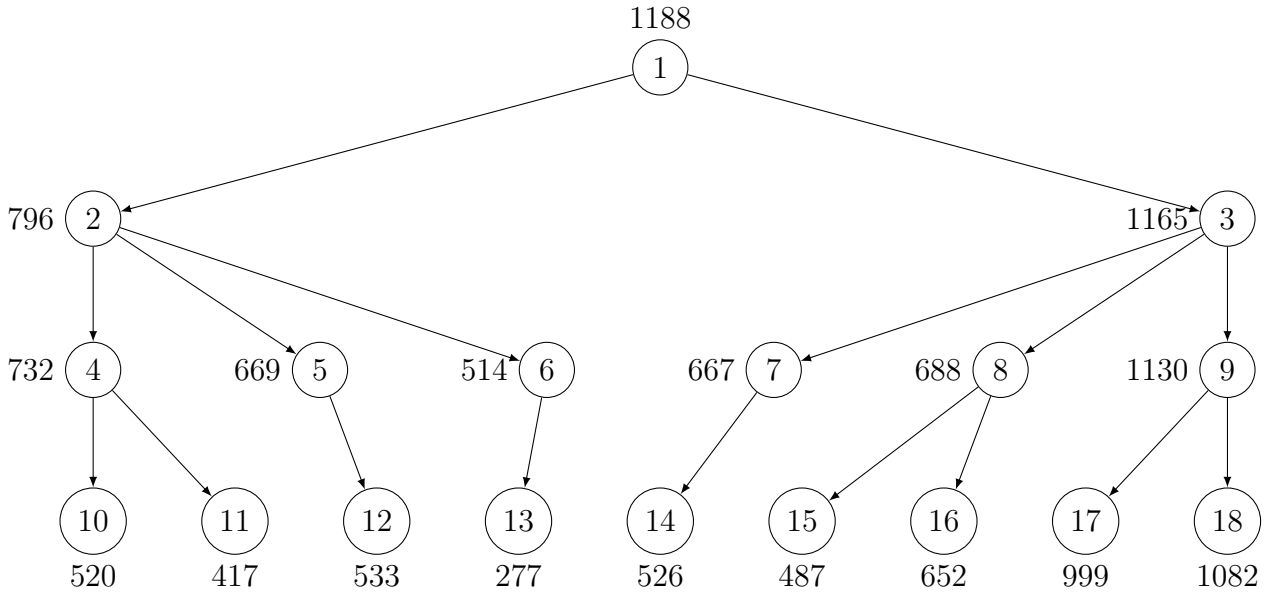
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 11-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



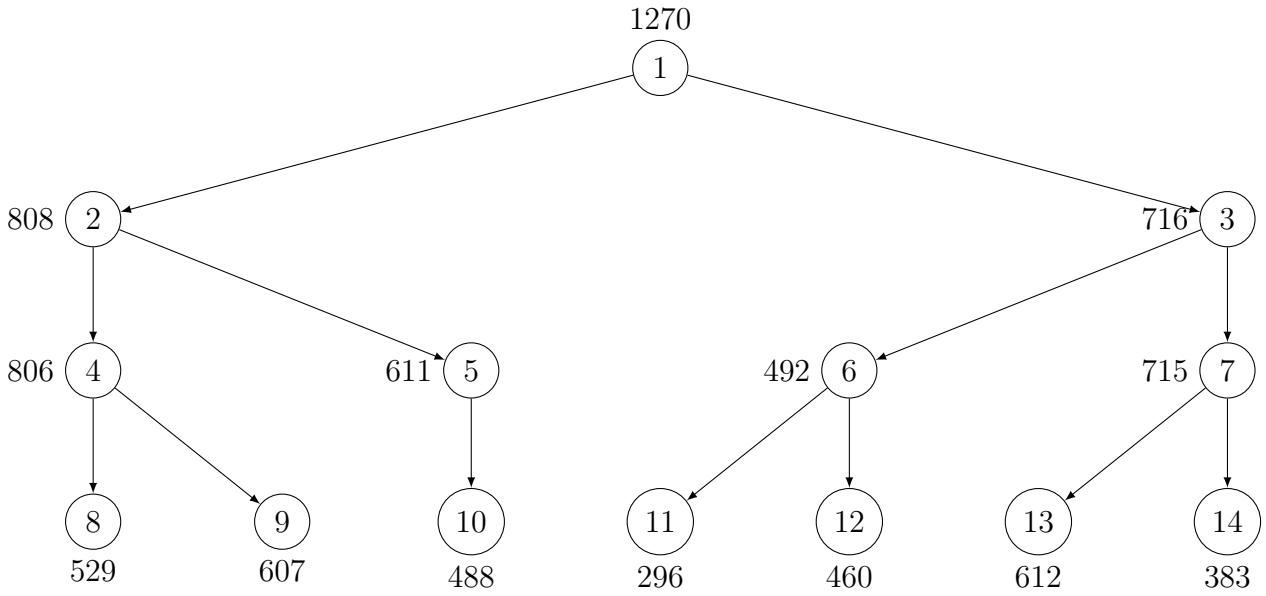
1 1	4 4	7 7	10 10	13 13	16 16
2 2	5 5	8 8	11 11	14 14	17 17
3 3	6 6	9 9	12 12	15 15	18 18

Question 10 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 4	☐ 6	☐ 8	☐ 10	☐ 12	☐ 14

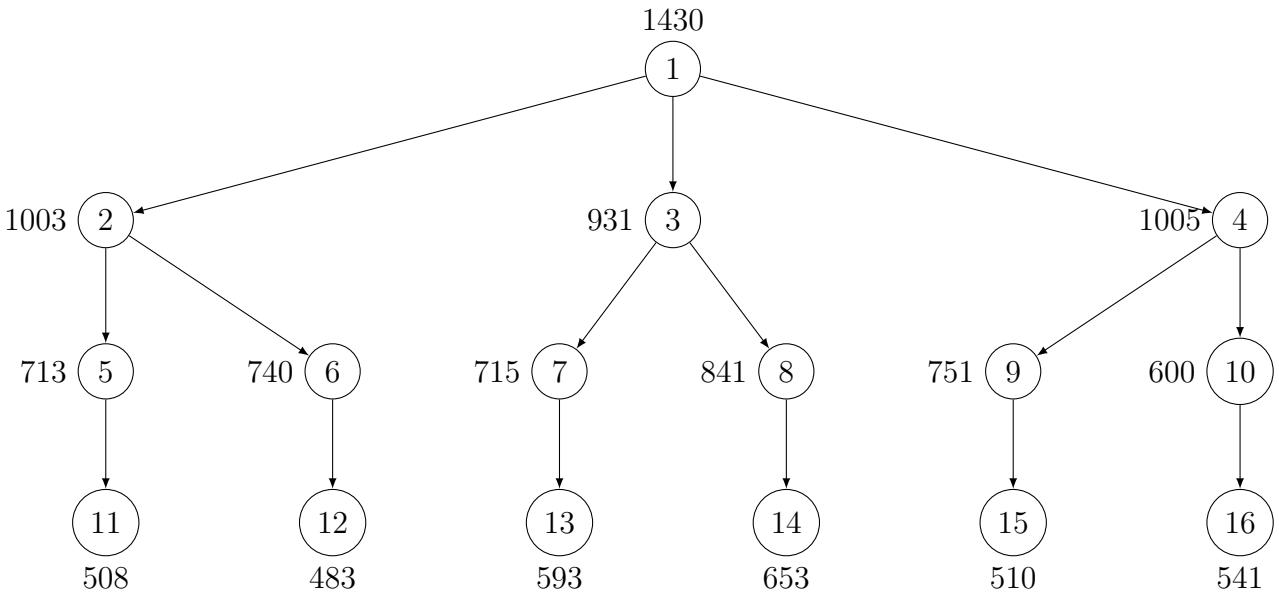
Question 11 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	

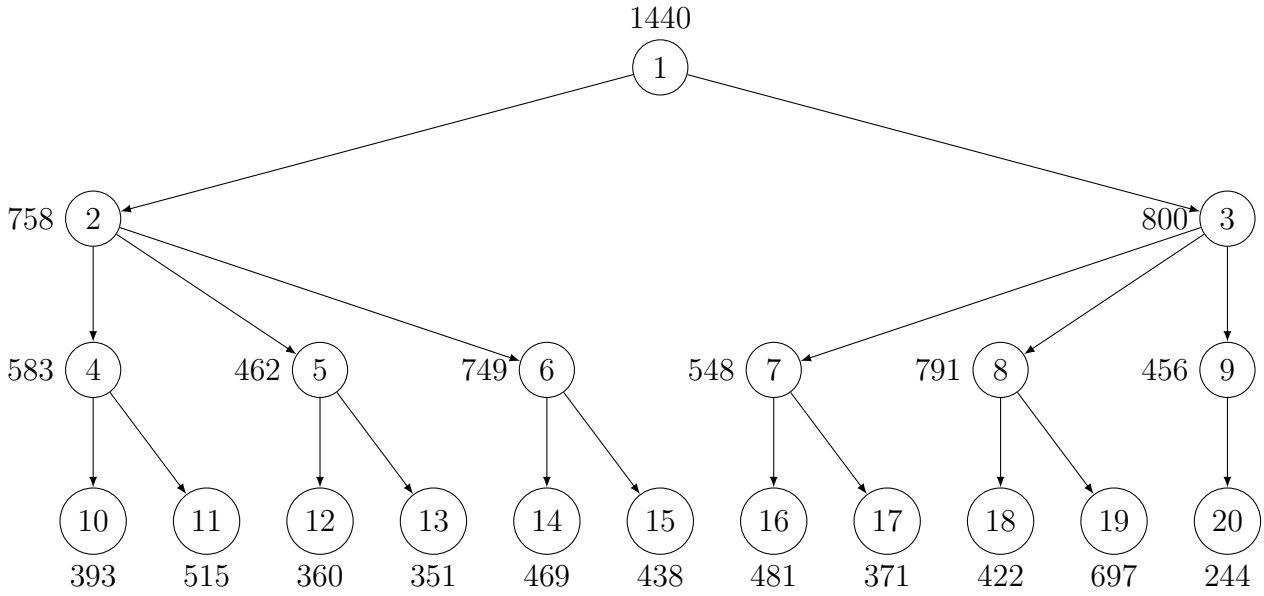
Question 12 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17	☐ 20
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	

Question 13

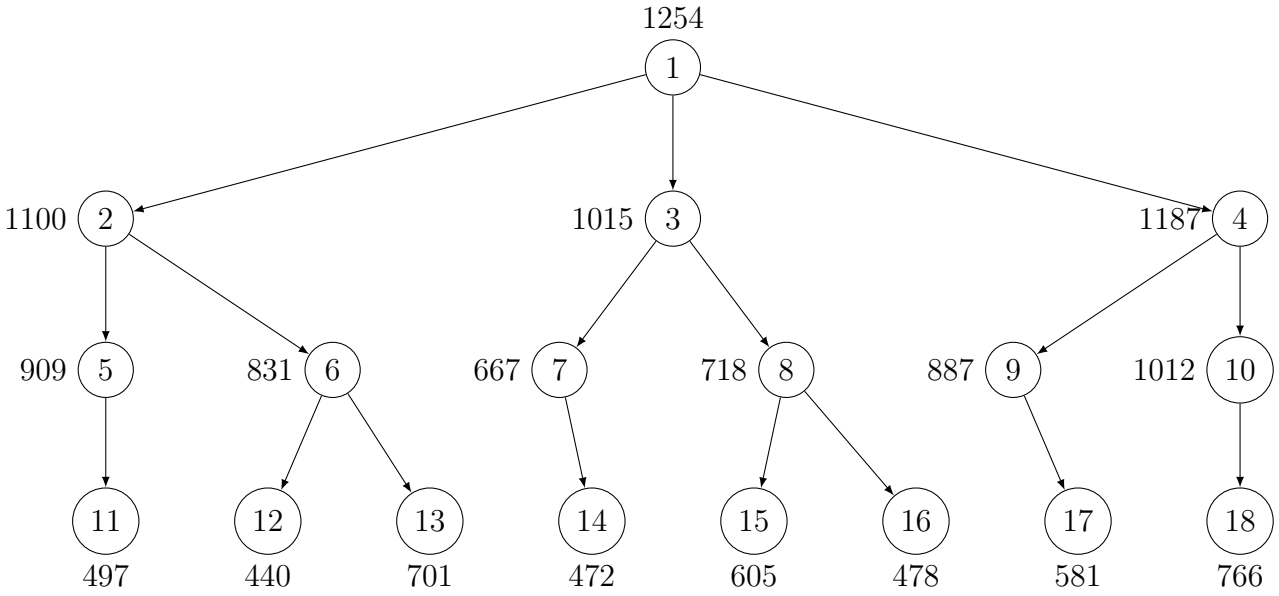
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 11-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



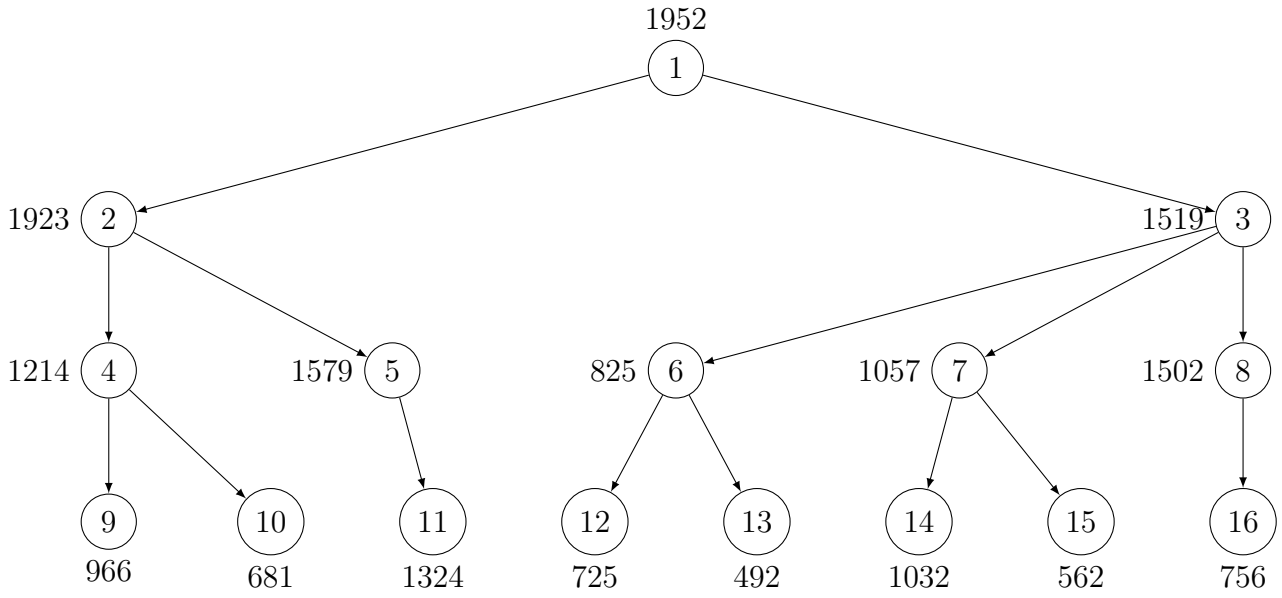
[1] 1	[4] 4	[7] 7	[10] 10	[13] 13	[16] 16
[2] 2	[5] 5	[8] 8	[11] 11	[14] 14	[17] 17
[3] 3	[6] 6	[9] 9	[12] 12	[15] 15	[18] 18

Question 14 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



☐ 1	☐ 4	☐ 7	☐ 10	☐ 13	☐ 16
☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	

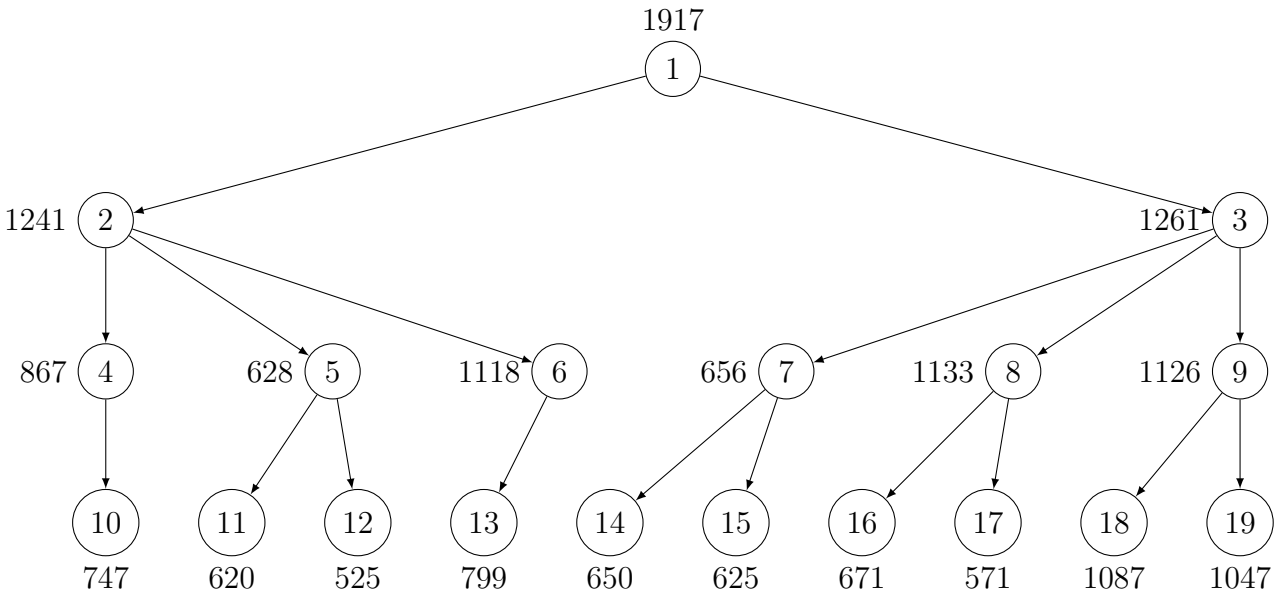
Question 15 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17	
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	

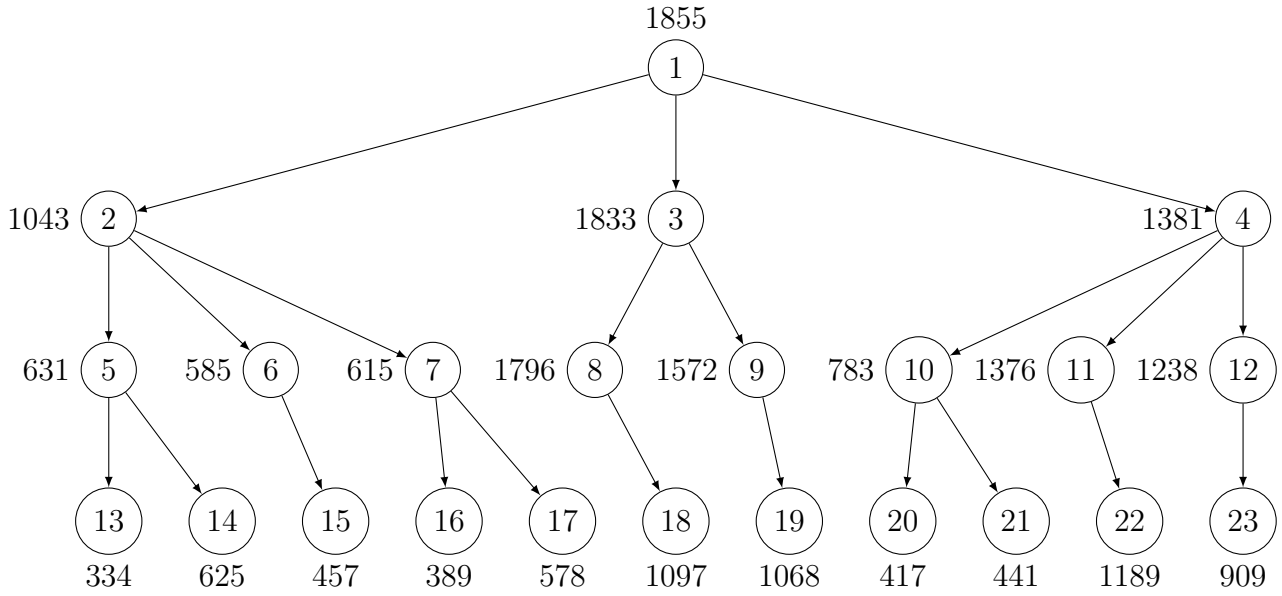
Question 16 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 6	☐ 10	☐ 14	☐ 18	☐ 22
☐ 3	☐ 7	☐ 11	☐ 15	☐ 19	☐ 23
☐ 4	☐ 8	☐ 12	☐ 16	☐ 20	

Question 17

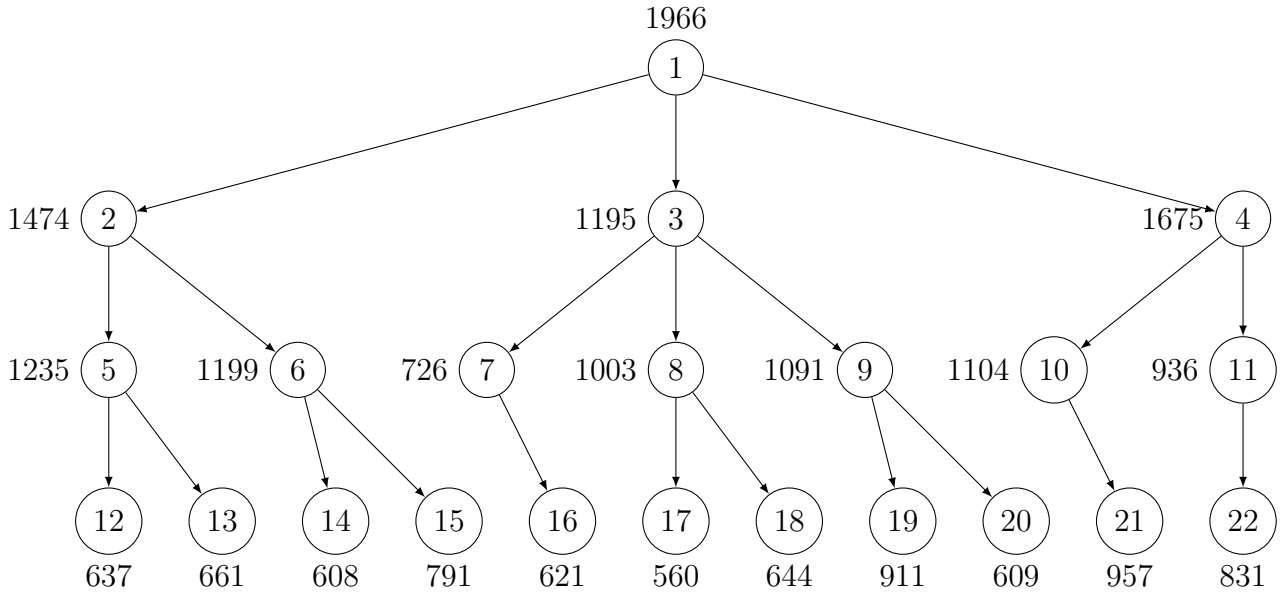
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 9-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



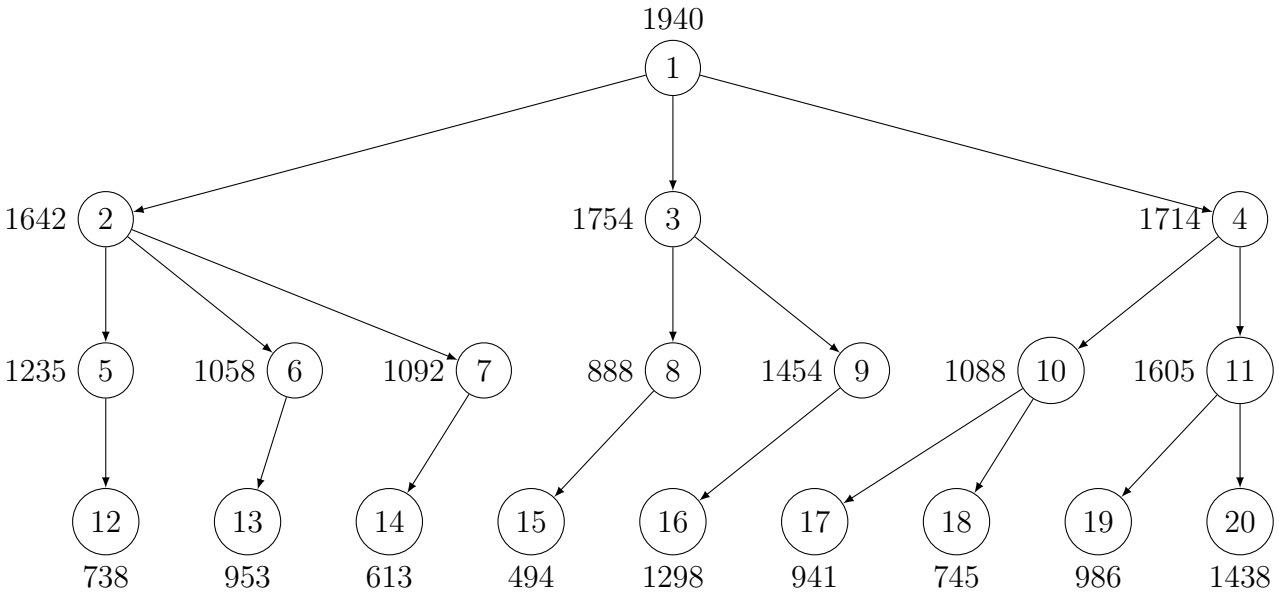
[1] 1	[5] 5	[9] 9	[13] 13	[17] 17	[21] 21
[2] 2	[6] 6	[10] 10	[14] 14	[18] 18	
[3] 3	[7] 7	[11] 11	[15] 15	[19] 19	
[4] 4	[8] 8	[12] 12	[16] 16	[20] 20	[22] 22

Question 18 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17	☐ 20
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	

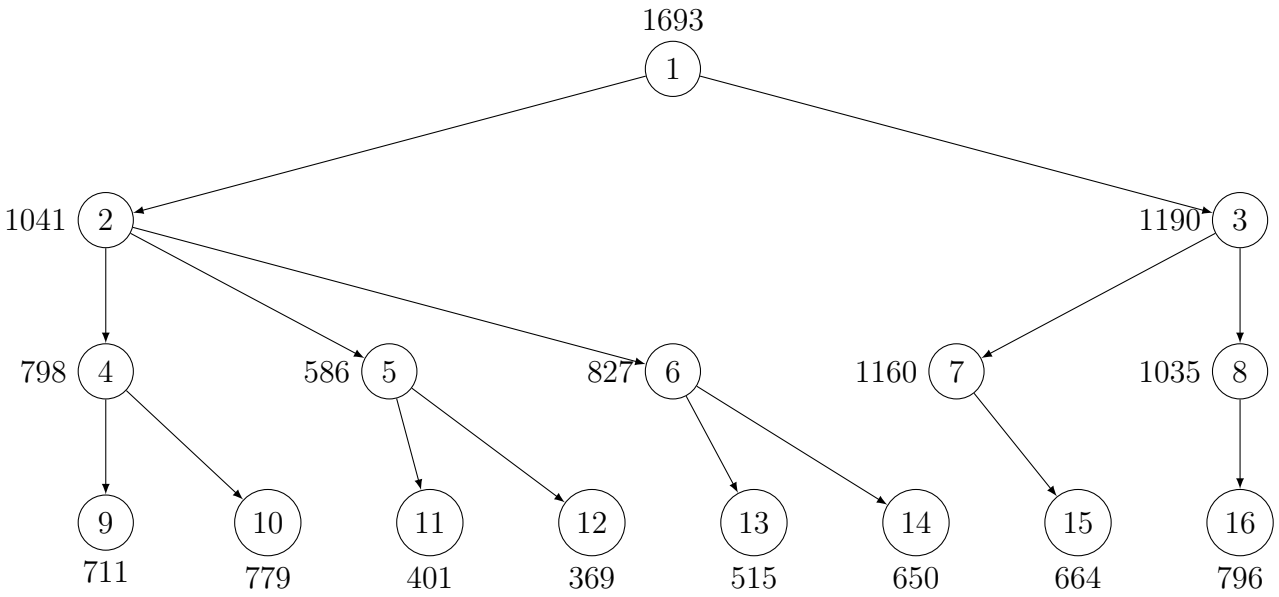
Question 19 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	

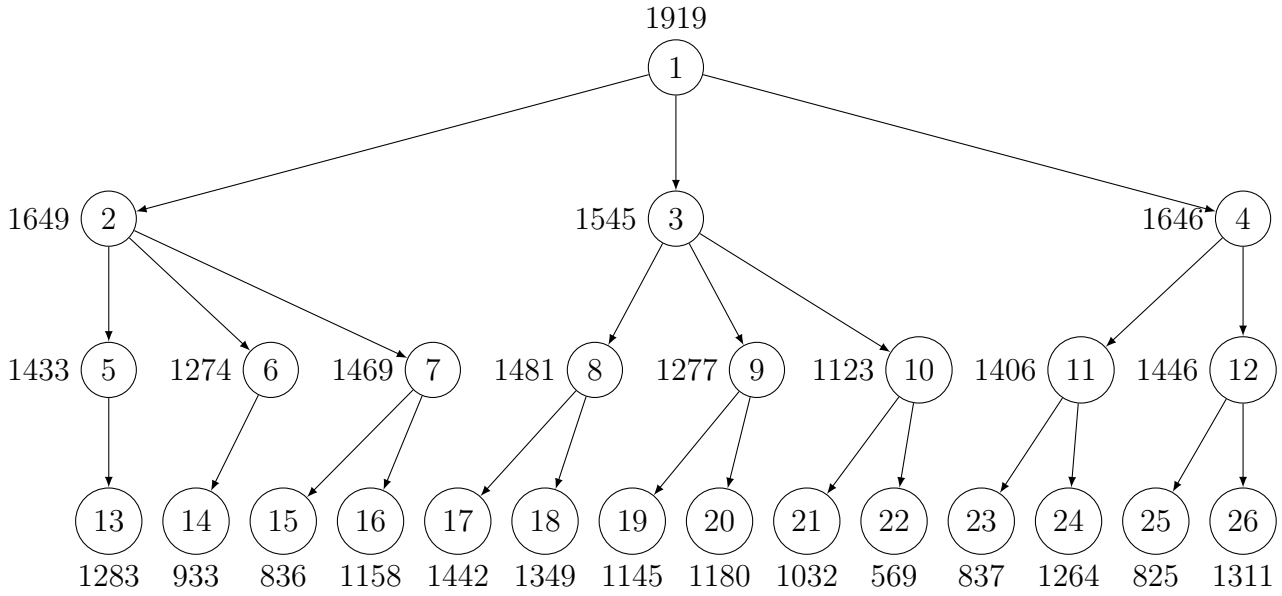
Question 20 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 6	☐ 10	☐ 14	☐ 18	☐ 22	☐ 26
☐ 3	☐ 7	☐ 11	☐ 15	☐ 19	☐ 23	
☐ 4	☐ 8	☐ 12	☐ 16	☐ 20	☐ 24	

Question 21

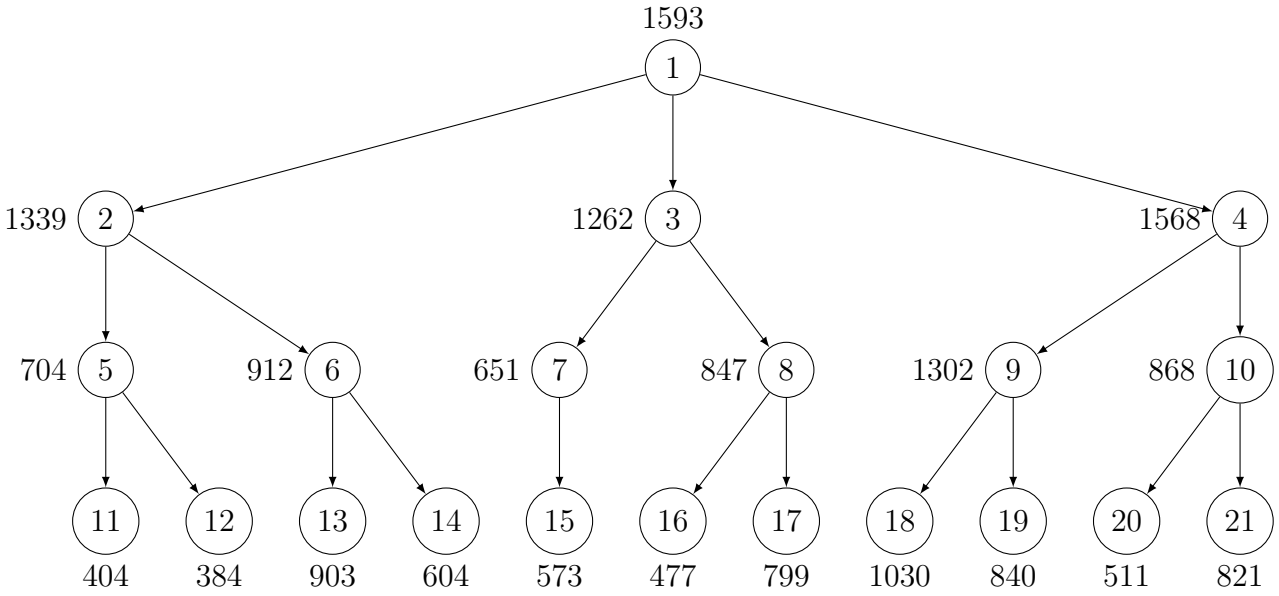
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 9-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



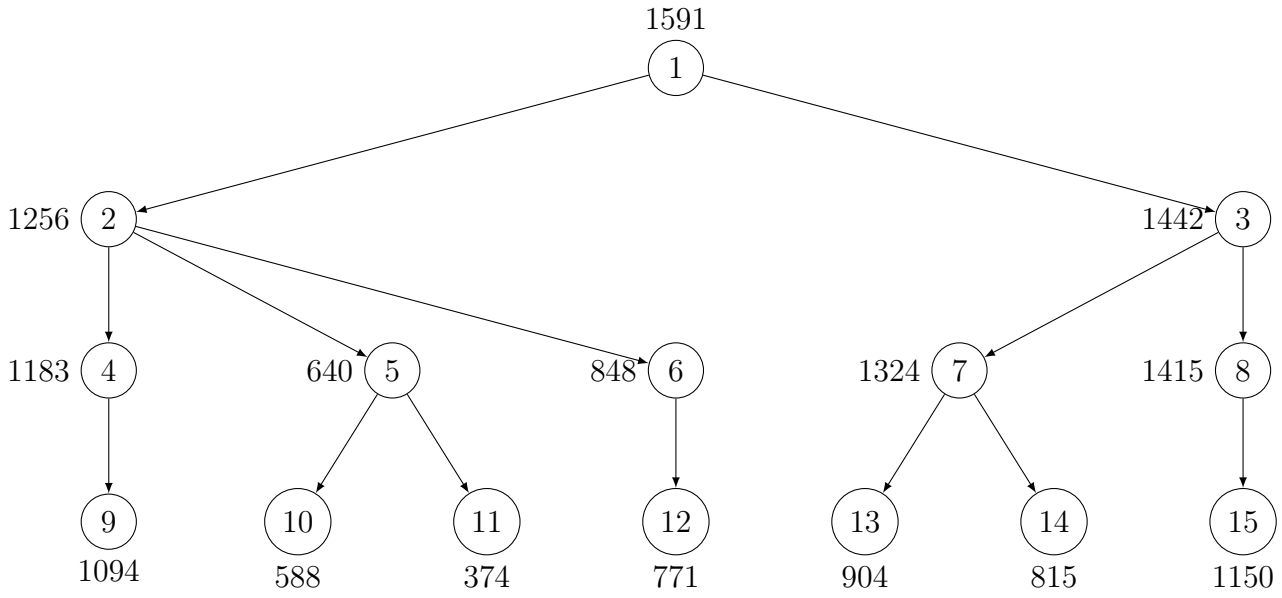
1 1	4 4	7 7	10 10	13 13	16 16	19 19
2 2	5 5	8 8	11 11	14 14	17 17	20 20
3 3	6 6	9 9	12 12	15 15	18 18	21 21

Question 22 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



☐ 1	☐ 4	☐ 7	☐ 10	☐ 13
☐ 2	☐ 5	☐ 8	☐ 11	☐ 14
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15

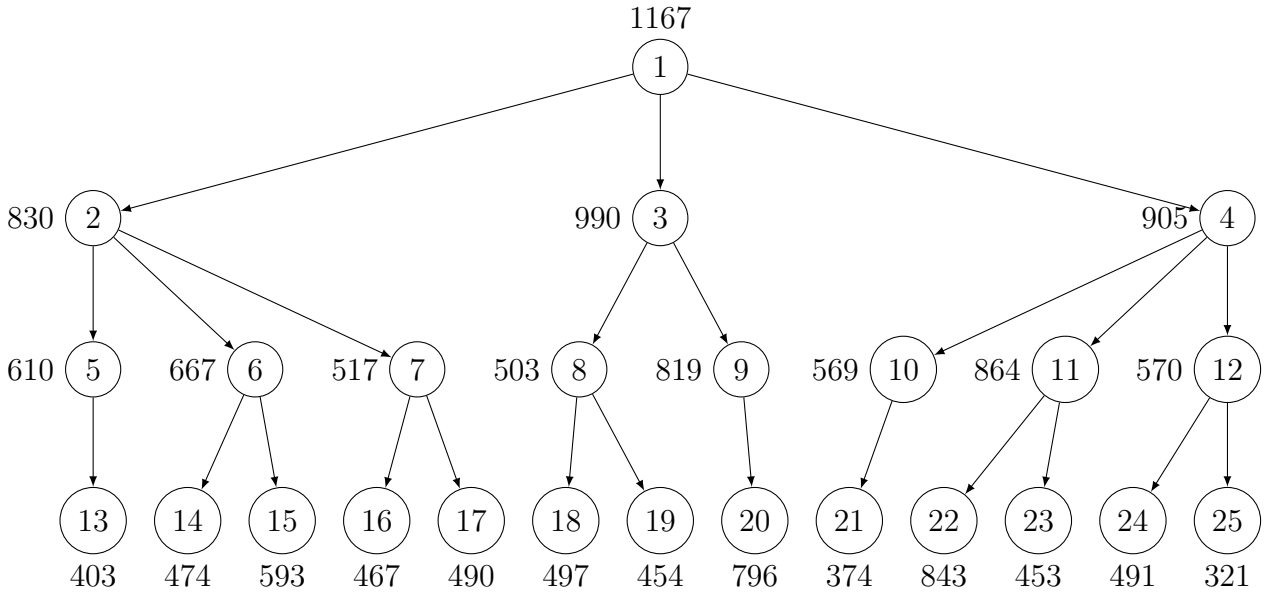
Question 23 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 6	☐ 10	☐ 14	☐ 18	☐ 22	
☐ 3	☐ 7	☐ 11	☐ 15	☐ 19	☐ 23	
☐ 4	☐ 8	☐ 12	☐ 16	☐ 20	☐ 24	

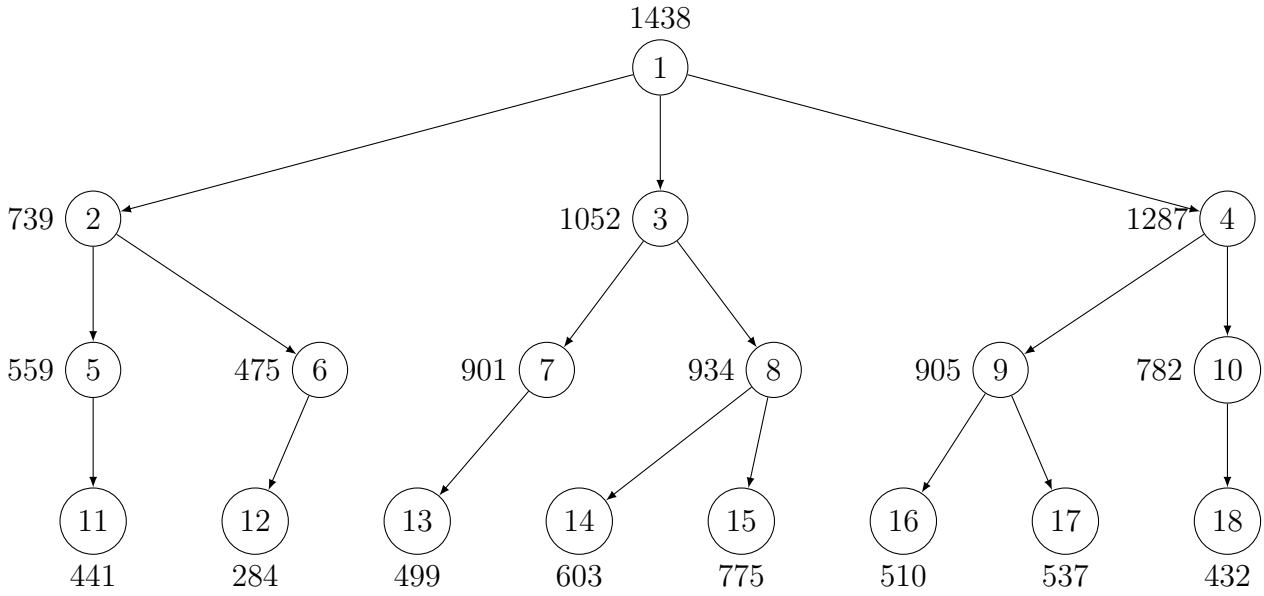
Question 24 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17
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Question 25

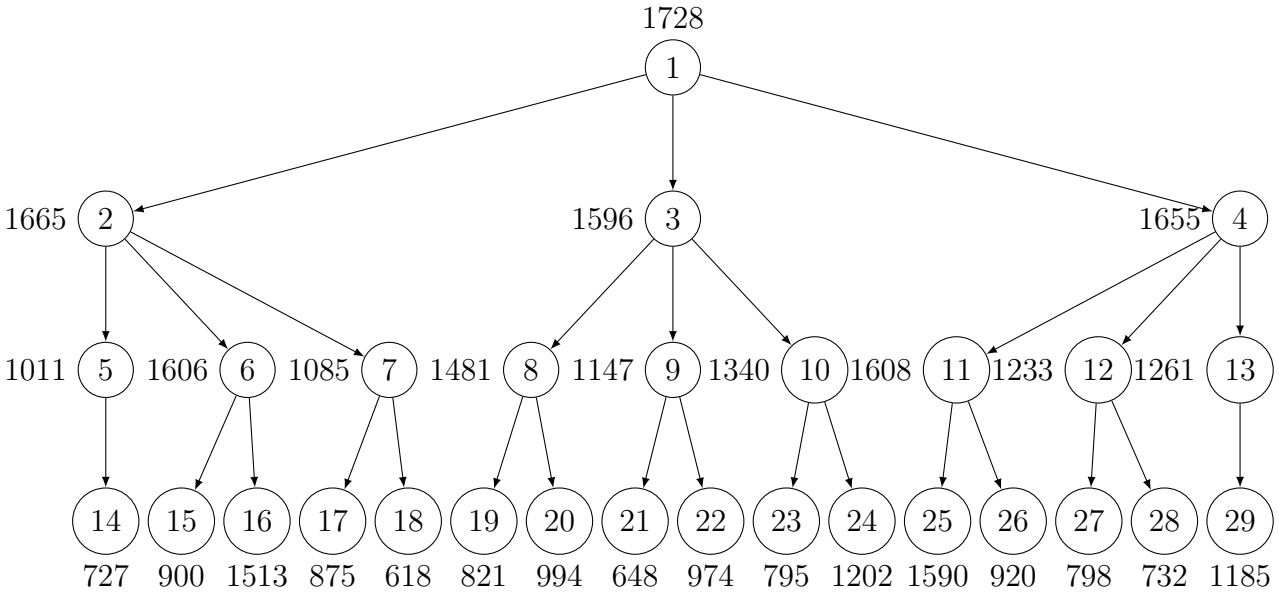
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 9-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



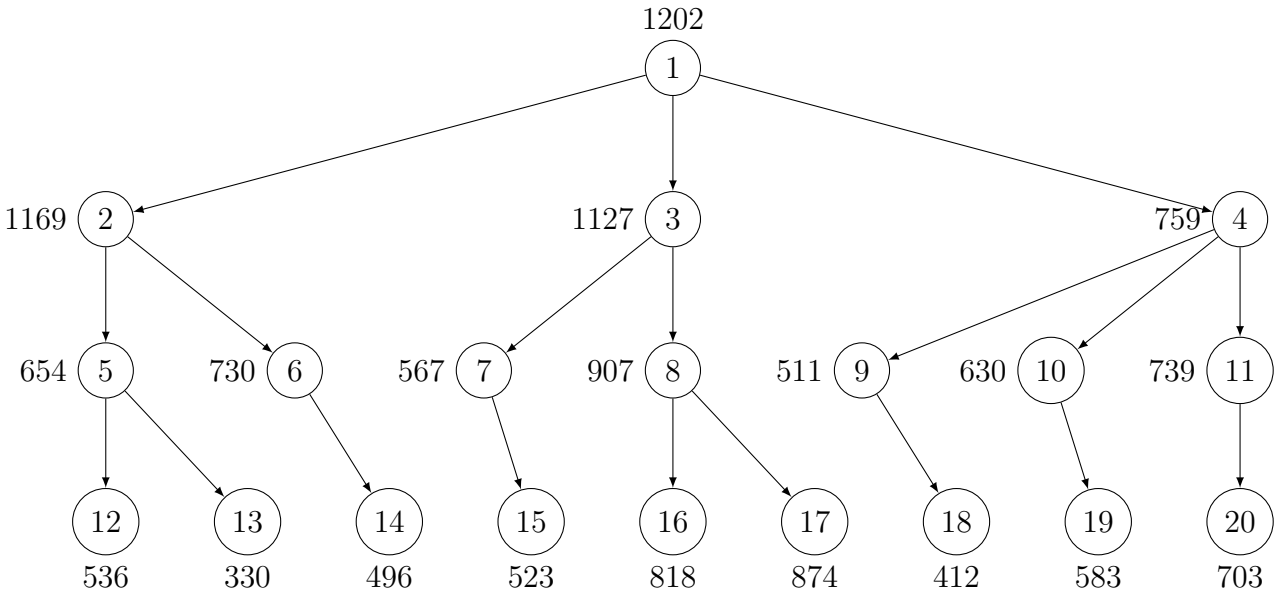
[1] 1	[6] 6	[11] 11	[16] 16	[21] 21	[26] 26
[2] 2	[7] 7	[12] 12	[17] 17	[22] 22	[27] 27
[3] 3	[8] 8	[13] 13	[18] 18	[23] 23	[28] 28
[4] 4	[9] 9	[14] 14	[19] 19	[24] 24	
[5] 5	[10] 10	[15] 15	[20] 20	[25] 25	[29] 29

Question 26 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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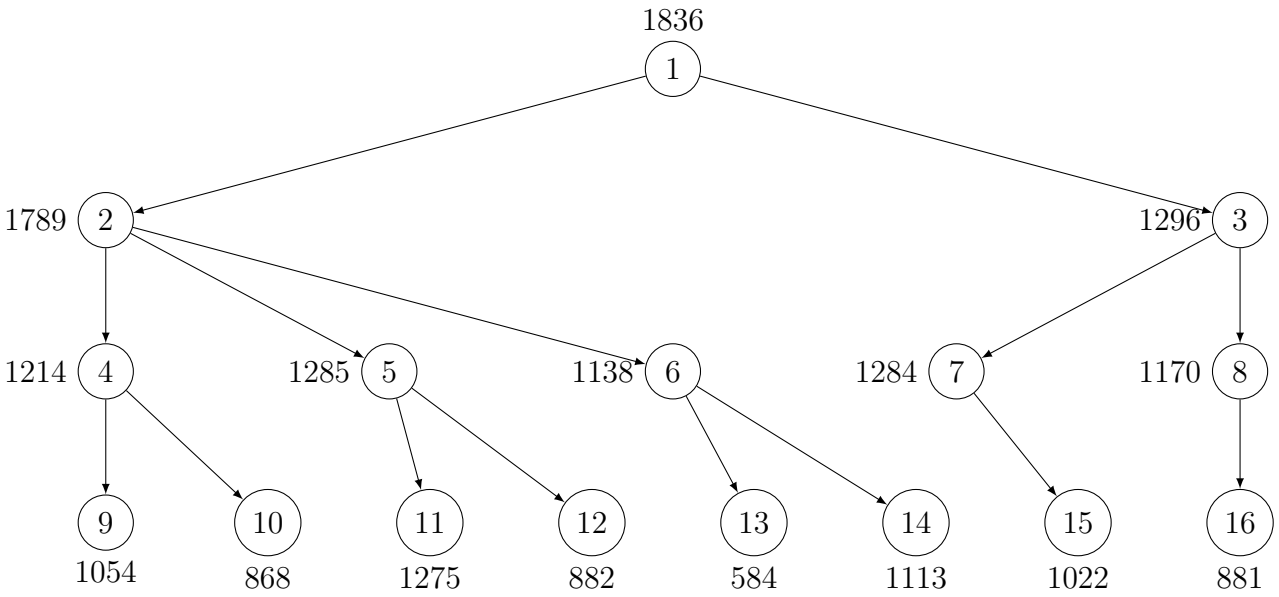
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	

Question 27 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

- All the solutions are feasible
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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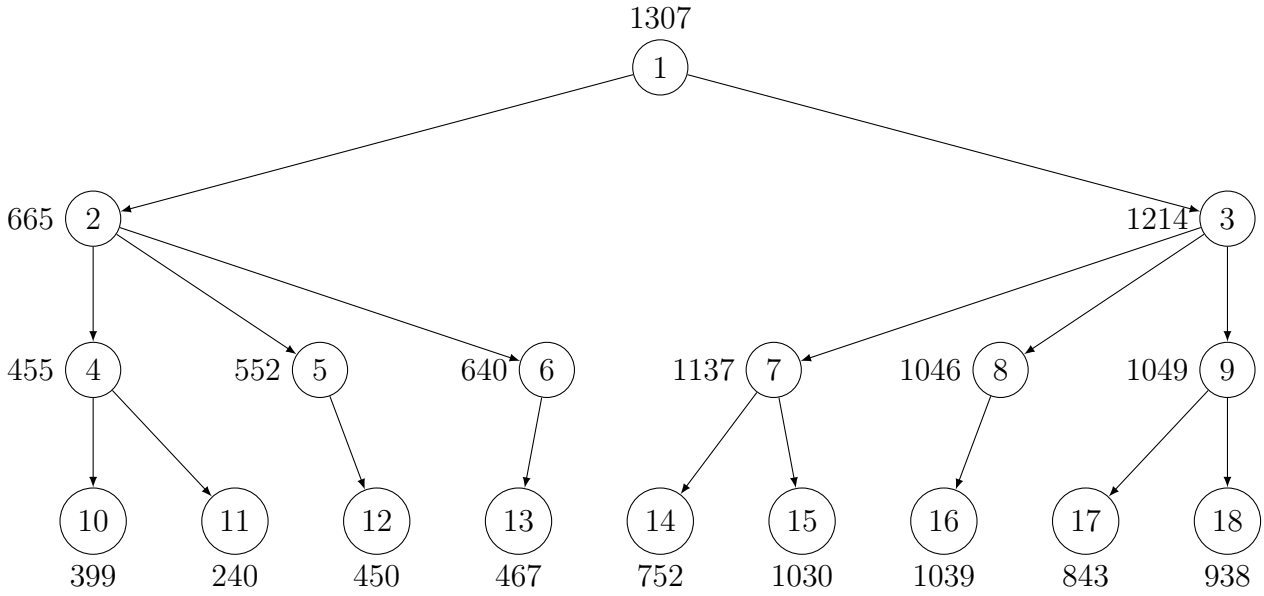
☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	

Question 28 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

- All the solutions are feasible
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18

Question 29

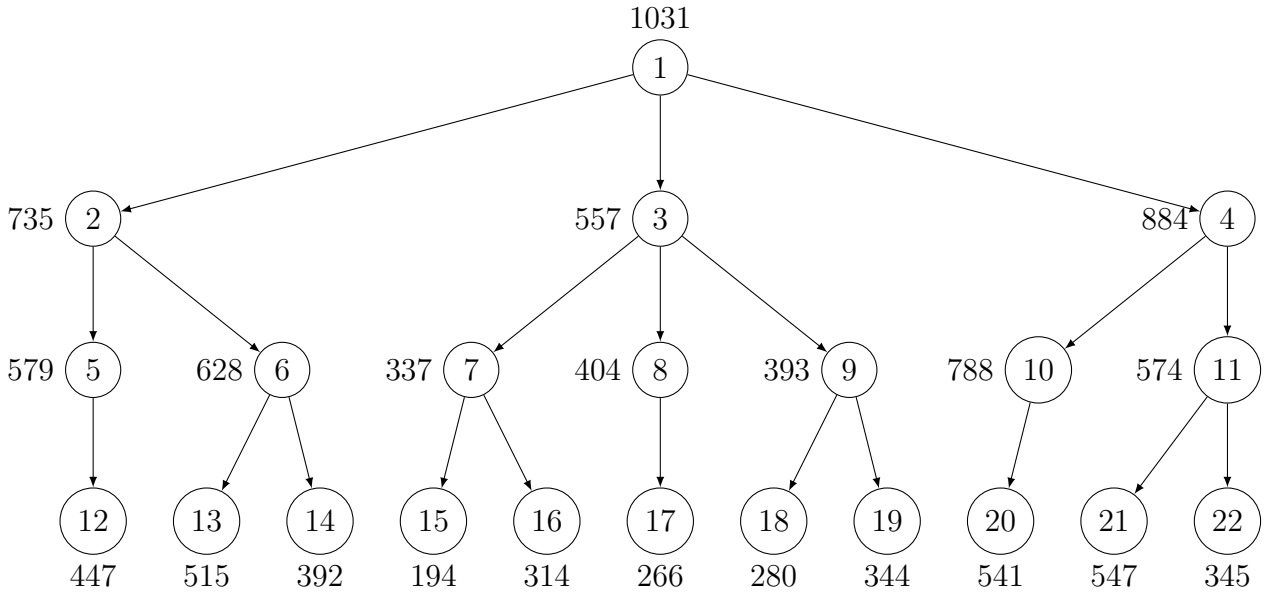
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 9-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



☐ 1	☐ 5	☐ 9	☐ 13	☐ 17	☐ 21
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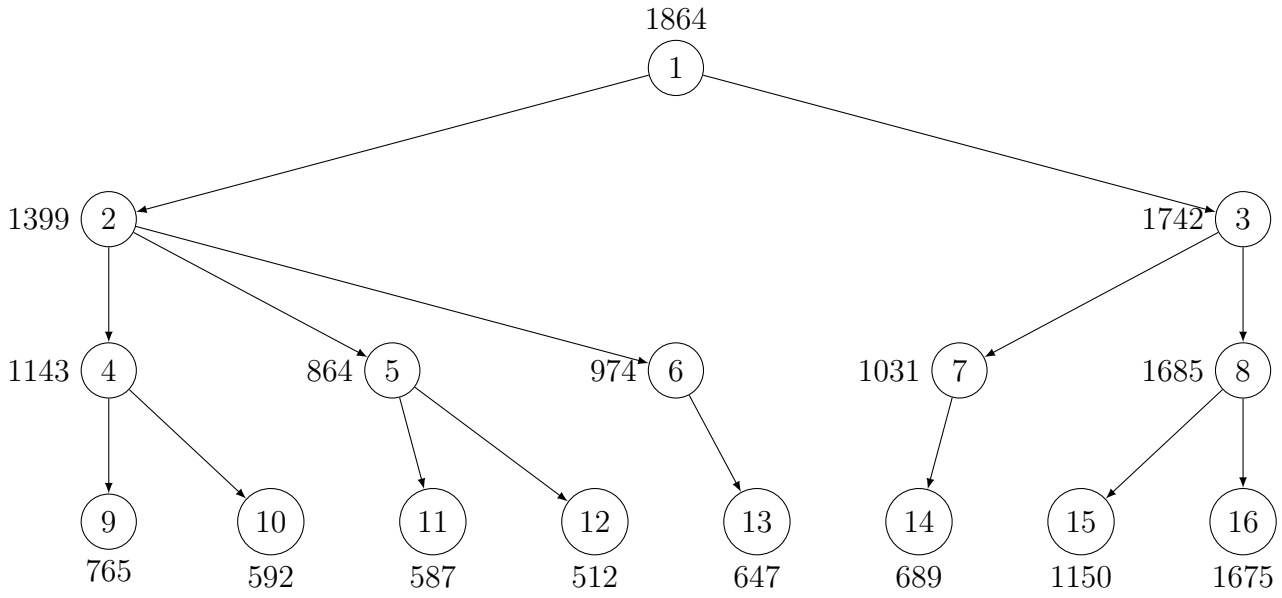
☐ 3	☐ 7	☐ 11	☐ 15	☐ 19	
☐ 4	☐ 8	☐ 12	☐ 16	☐ 20	☐ 22

Question 30 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	

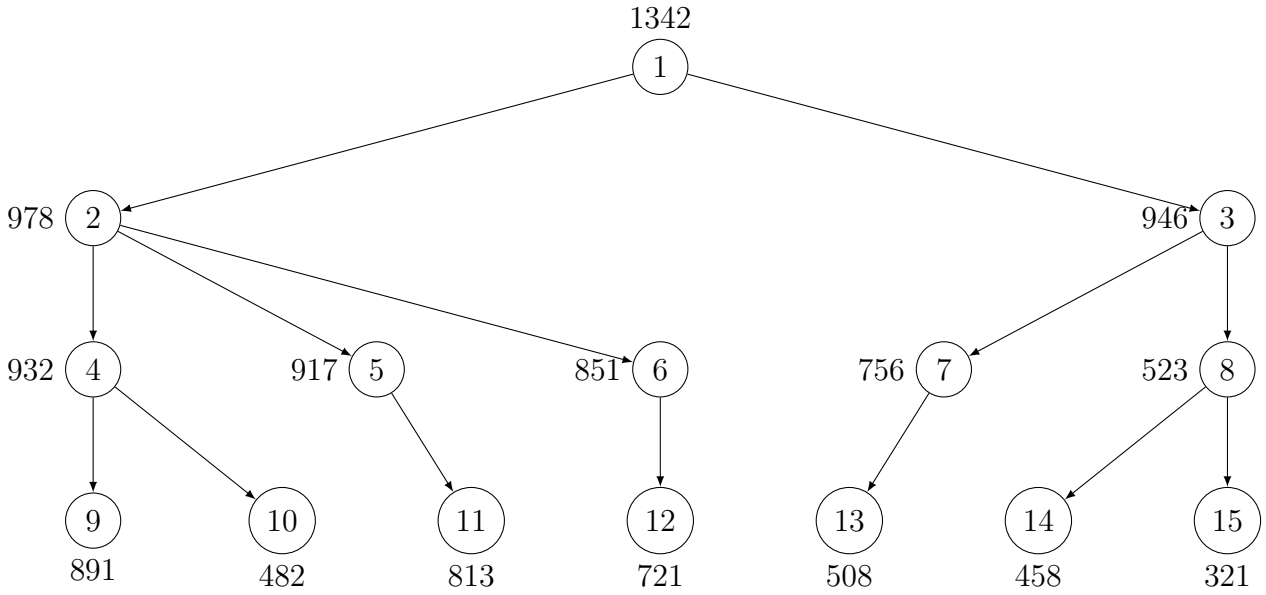
Question 31 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



☐ 1	☐ 4	☐ 7	☐ 10	☐ 13
☐ 2	☐ 5	☐ 8	☐ 11	☐ 14
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15

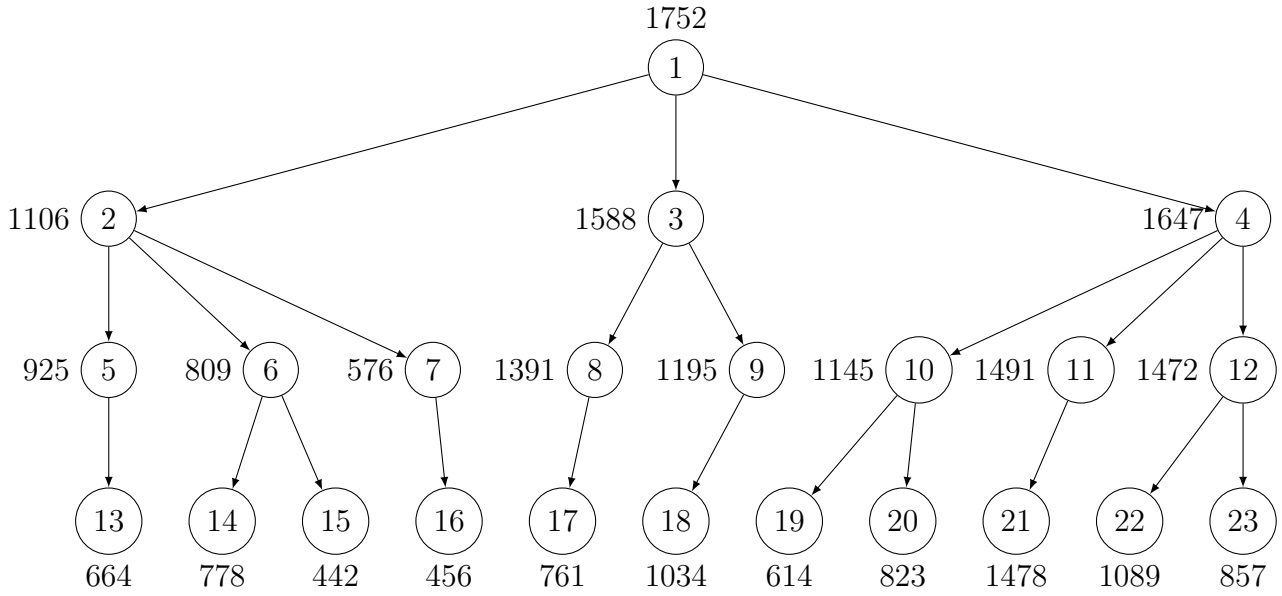
Question 32 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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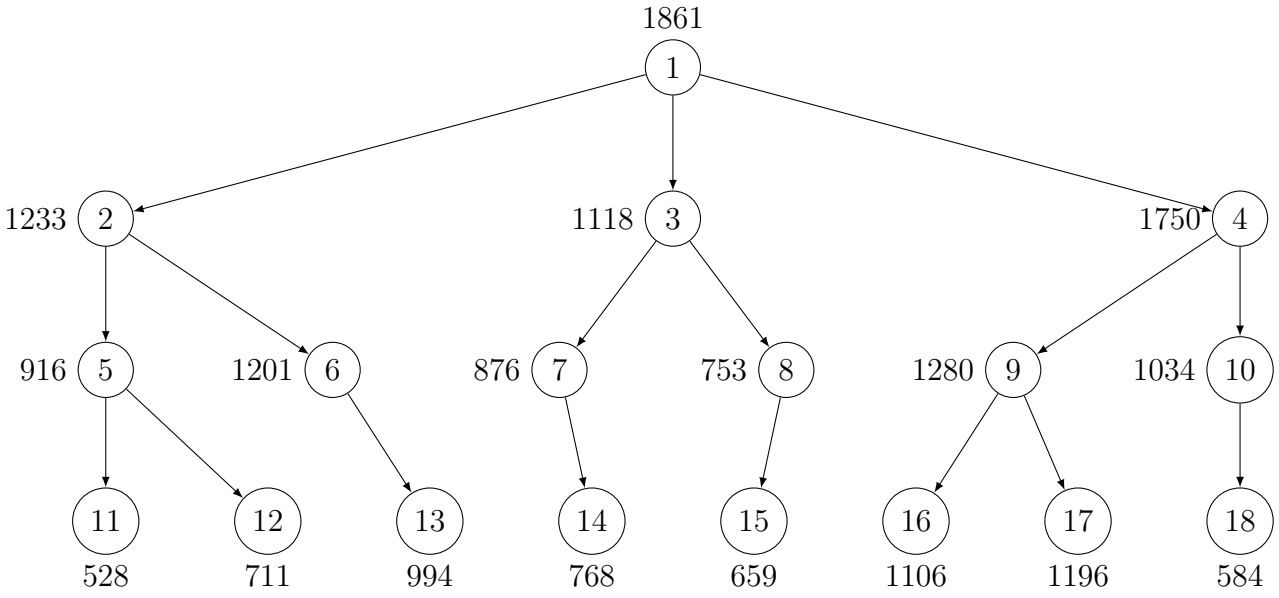
☐ 2	☐ 6	☐ 10	☐ 14	☐ 18	☐ 22
☐ 3	☐ 7	☐ 11	☐ 15	☐ 19	☐ 23
☐ 4	☐ 8	☐ 12	☐ 16	☐ 20	

Question 33
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 11-th explored node by a depth-first-search exploration.
Remark

- The rood is the first explored node
- All the solutions are feasible
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



[1] 1	[4] 4	[7] 7	[10] 10	[13] 13	[16] 16
[2] 2	[5] 5	[8] 8	[11] 11	[14] 14	[17] 17
[3] 3	[6] 6	[9] 9	[12] 12	[15] 15	[18] 18

Question 34 ♣

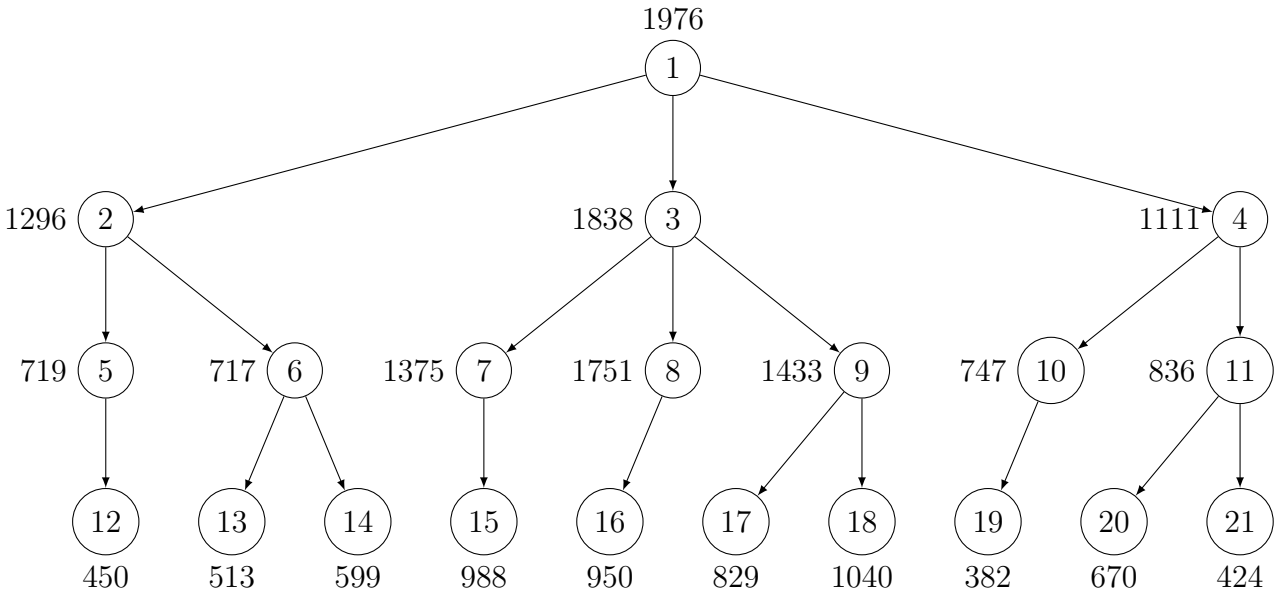
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

— All the solutions are feasible, a node is cut only if its bound is lower than the best current solution

— If a node is cut, the descendant of the nodes are not cut

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17	☐ 20
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	☐ 21

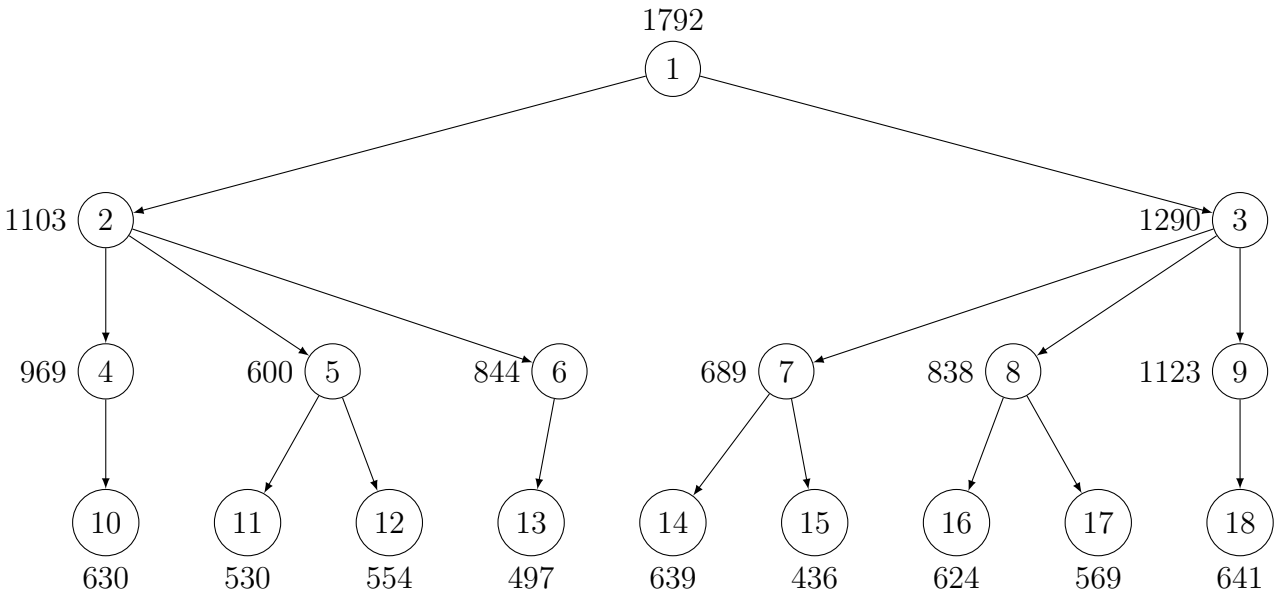
Question 35 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18

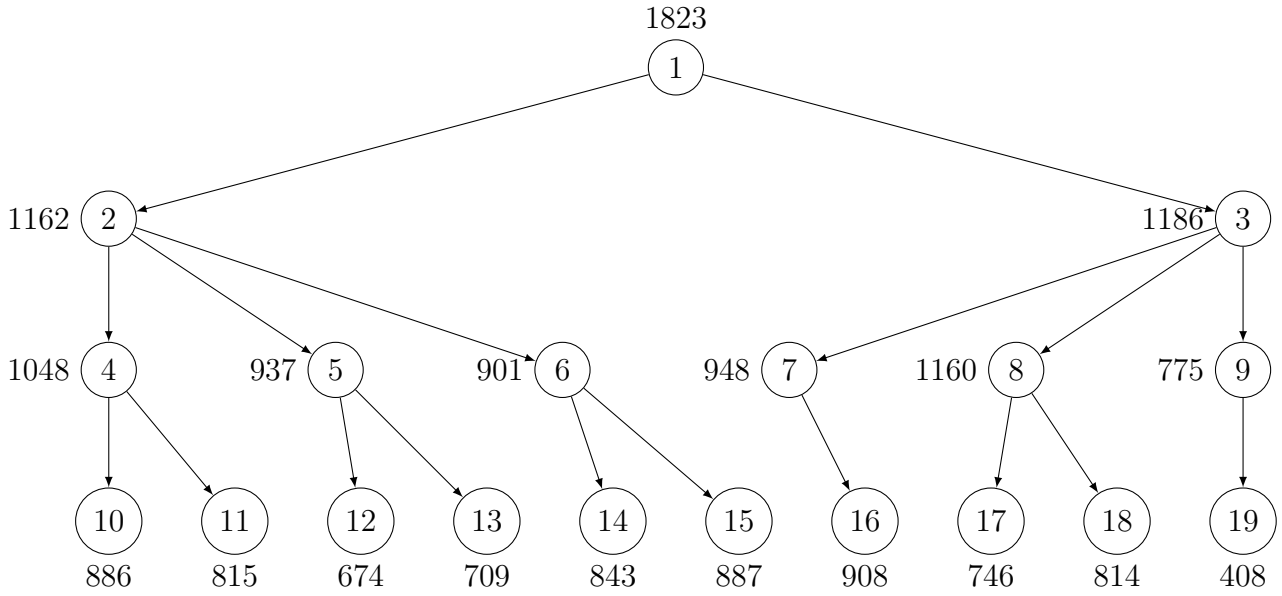
Question 36 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17	
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18	

Question 37

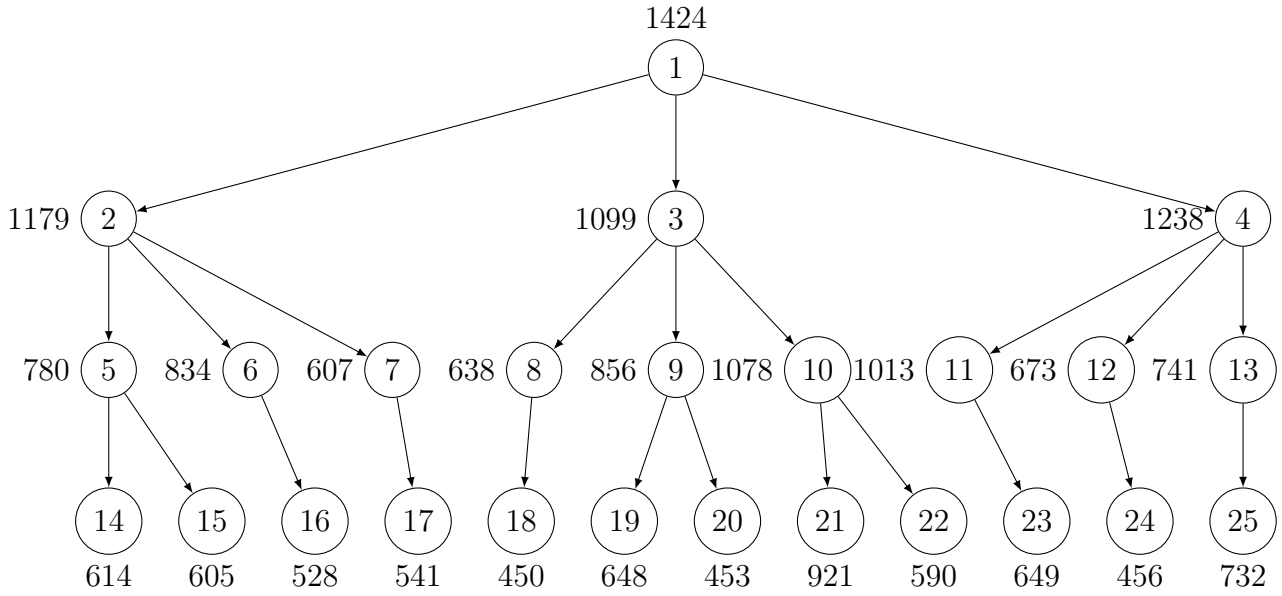
The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the 11-th explored node by a depth-first-search exploration.

Remark

— The rood is the first explored node

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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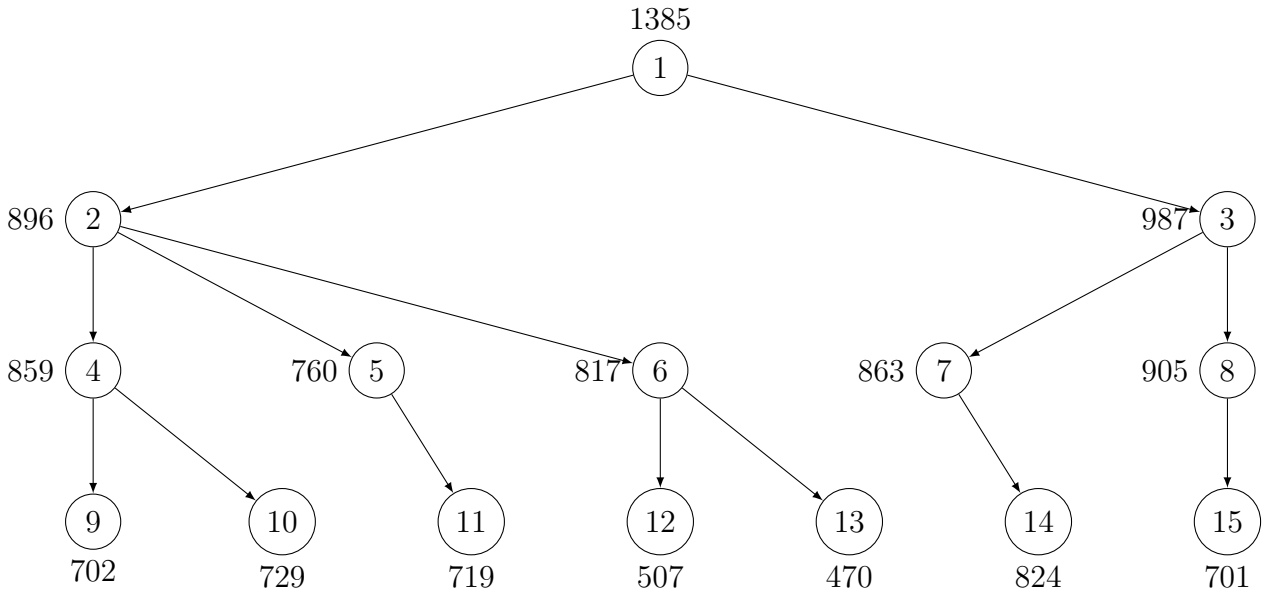
2 2	6 6	10 10	14 14	18 18	22 22	
3 3	7 7	11 11	15 15	19 19	23 23	
4 4	8 8	12 12	16 16	20 20	24 24	

Question 38 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check the nodes that are cut by a depth-first-search exploration.

Remark

- All the solutions are feasible, a node is cut only if its bound is lower than the best current solution
- If a node is cut, the descendant of the nodes are not cut
- The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15

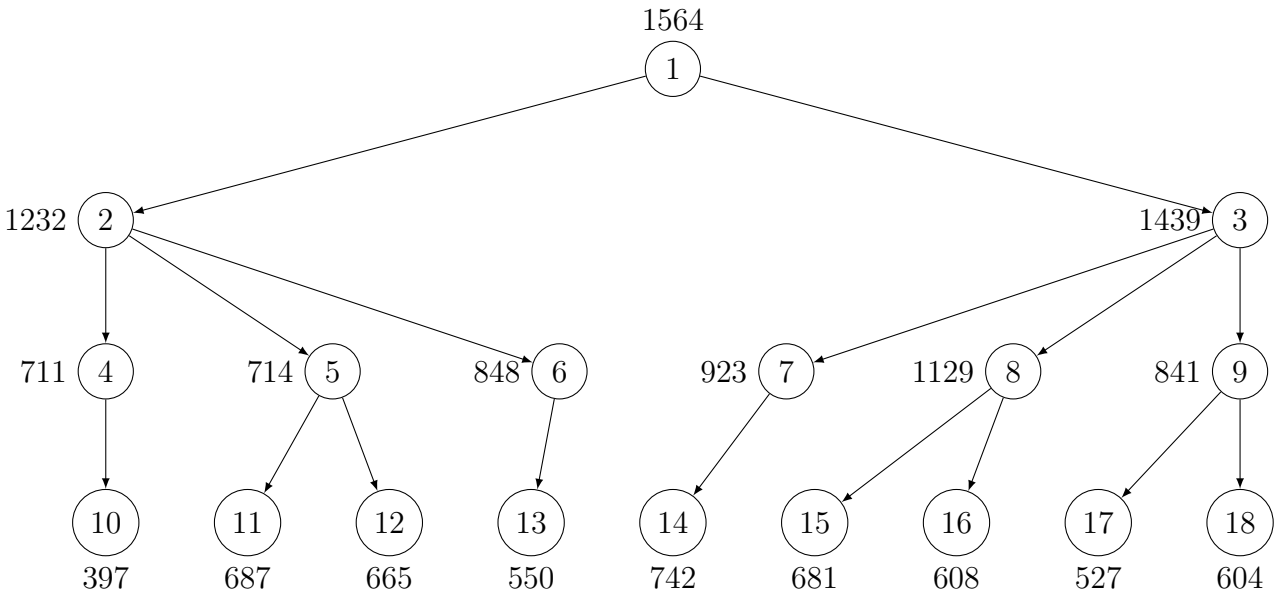
Question 39 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a depth-first-search exploration.

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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☐ 2	☐ 5	☐ 8	☐ 11	☐ 14	☐ 17
☐ 3	☐ 6	☐ 9	☐ 12	☐ 15	☐ 18

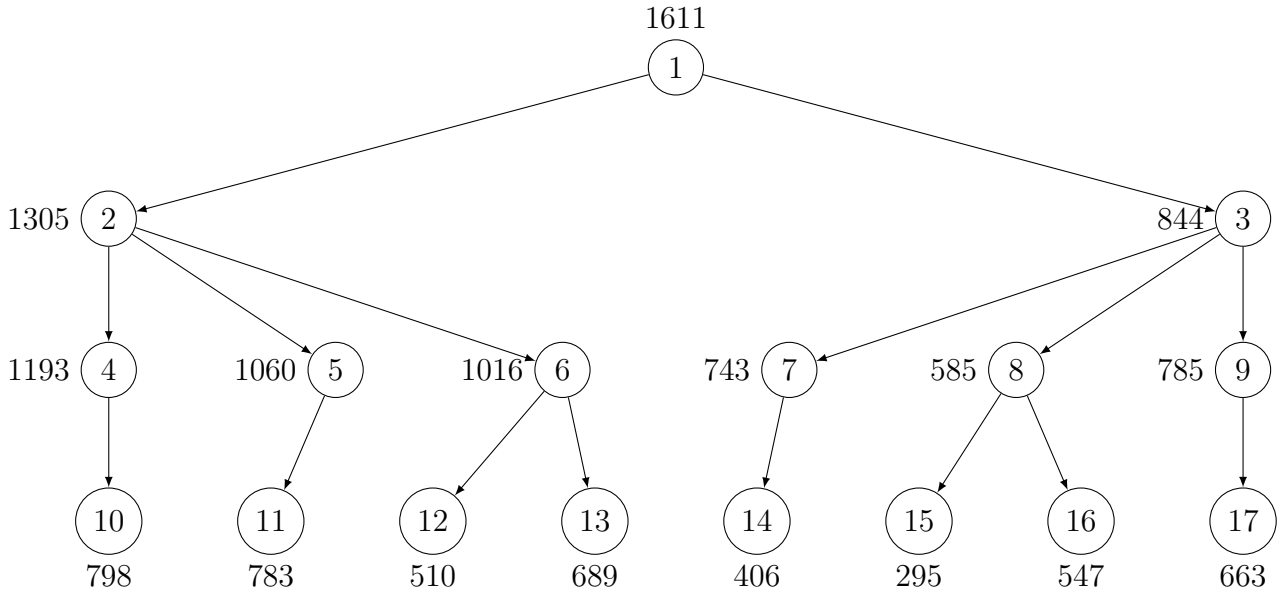
Question 40 ♣

The whole exploration tree of a Branch and Bound technique used to solve a maximisation problem is drawn below. Each node is associated with an upper bound. The value indicated next to a leaf is the weight of the associated feasible solution. Check all the nodes that will be explored by a best-first exploration, until a leaf is explored. (Check also that leaf).

Remark

— All the solutions are feasible

— The maximization problem we solve is not specified. However you do not need to know that problem to answer the question.



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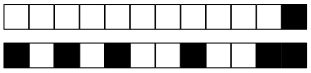

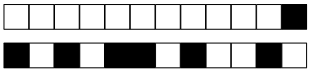

Entraînement - Training

Noircissez complètement ci-dessous les 3 premières lettres de votre nom de famille et la première lettre de votre prénom. Par exemple, pour Jean Dupont, cochez J, D, U, P ; pour Henri Harley, cochez seulement H, A, R ; pour Bernard Ca, cochez seulement A, B, C.

Check entirely the 3 first letters of your lastname and the first letter of your firstname. For instance, for Jean Dupont, check J, D, U, P ; for Henri Harley, check only H, A, R ; for Bernard Ca, check only A, B, C.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Then write your lastname and firstname below.

Nom et prénom :

. . . . . .

Les réponses aux questions sont à donner exclusivement sur cette feuille. Les réponses données sur les feuilles précédentes ne seront pas prises en compte. Pour cocher une case, il faut la **noircir complètement**. Vous pouvez effacer votre réponse à la gomme ou avec du blanc, attention à ne pas effacer la case à cocher. Si vous êtes dans l'impossibilité de corriger une erreur, cette page est dupliquée au verso ; vous pouvez alors barrer cette feuille ci et répondre au verso.

Question 1 : 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21

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Question 39 : 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Question 40 : 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17