Introduction

Browser Meta Info

This question will not be displayed to the recipient.
Browser: **Chrome**
Version: **41.0.2272.104**
Operating System: **Macintosh**
Screen Resolution: **1440x900**
Flash Version: **17.0.0**
Java Support: **1**
User Agent: **Mozilla/5.0 (Macintosh; Intel Mac OS X 10_10_2) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/41.0.2272.104 Safari/537.36**

Tree Terminology

This survey uses basic tree terminology. Some of these terms are provided for you below. You can access this information by clicking "Toggle Help" on most question pages.

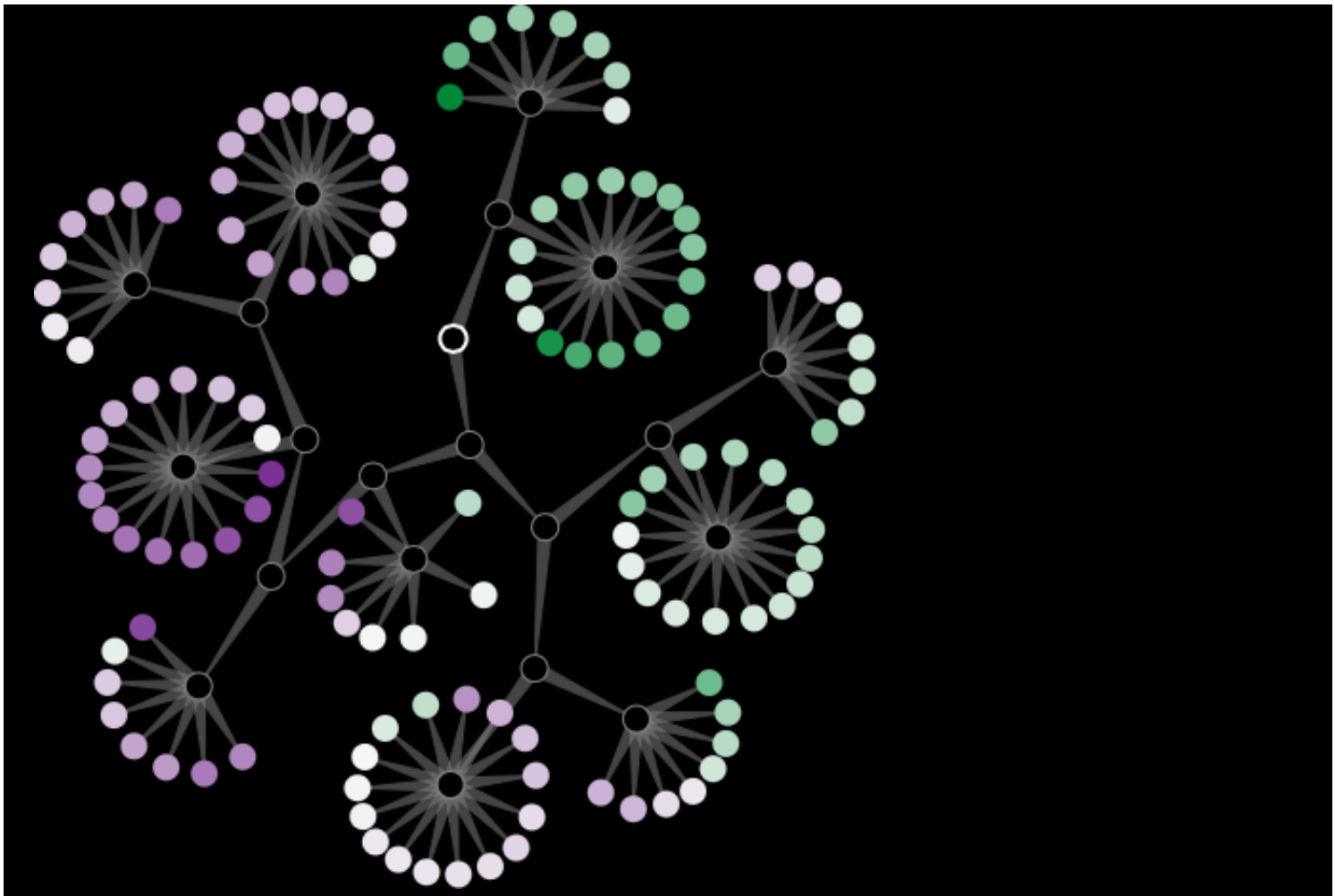
If node A connects to node B, then node A is considered the **parent** of node B. Similarly, node B is considered the **child** of node A. Nodes are **siblings** if they share the same parent node.

The **root** of a tree is the top-most node of the tree and has no parent. A **leaf** node is a node with no children. The **height** of a tree is the maximum number of edges between the root node and any leaf node.

The **descendants** of a node include its children and all nodes reachable from those children. A **cluster** is a node and all of its descendants. Nodes are **closely clustered** when their values are similar and their parent connects them at a low level of the tree far from the root node.

Visualization Basics

This survey will ask you to interpret the following visualization:



All **nodes** are represented by circles. The **root** node in this visualization is outlined in white and placed at the center of the figure. Each **edge**, given by the parent-child relationship between two nodes, is indicated by a tapered line such that the line is thicker at the parent node and thinner at the child node.
Leaves are colored such that **negative** values are purple in color and **positive** values are green in color. Other nodes have no fill color.
Each section of this survey will start with untimed training questions to help you learn how to interpret this visualization. You can also access this information by clicking "Toggle Help" on most question pages.

Task Set 1 (Training)

The following questions will help you learn how to interpret this visualization. Click "Toggle Help" to reveal additional information that may help you answer the

question.
For these questions, please try to be as **accurate** as possible.

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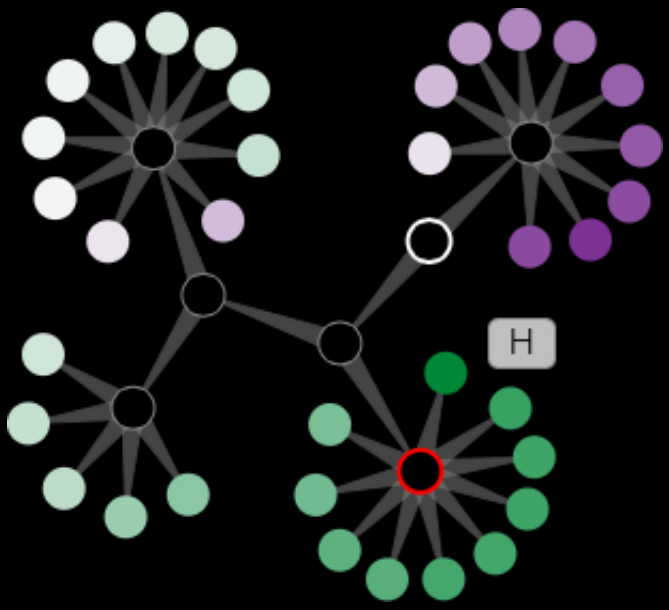

Is the highlighted cluster (including leaves) mostly positive or mostly negative?

Mostly Positive
Mostly Negative
Unsure

Try to determine if the leaves in the cluster are more green (positive) or more purple (negative) overall.

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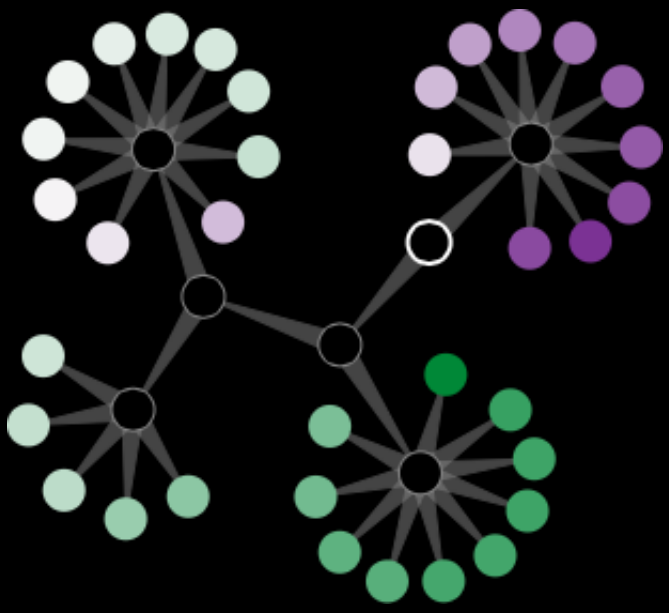

What is the height of the tree?

1 2 3 4 5 6 7 8 9 10

Height

Make sure you are accounting for the root and leaf nodes in the height.

Task Set 1 (Timed)

The following questions will help us learn which tasks are difficult or time consuming when using this visualization. **Your responses will be timed.** Please try to be as accurate and efficient as possible.

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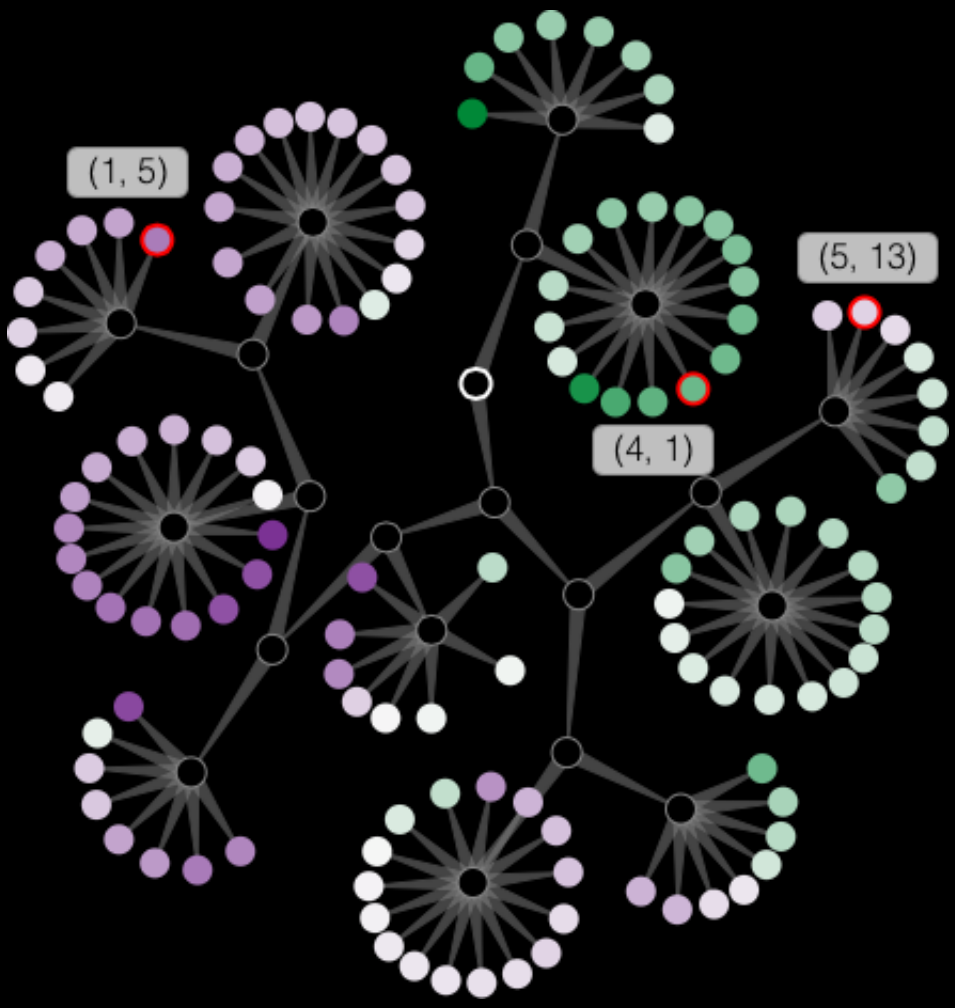

Which of the highlighted elements has the highest value?

(1, 5)

(4, 1)

(5, 13)

Unsure

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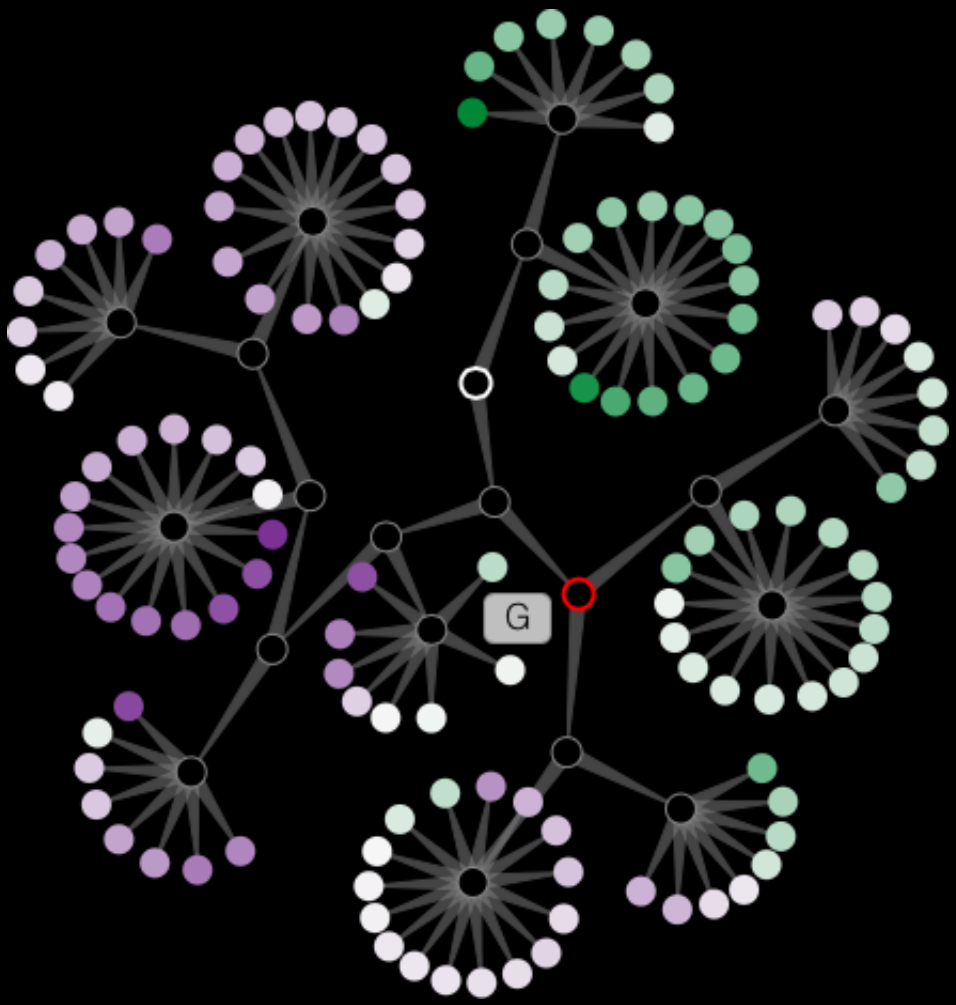

Is the highlighted cluster (including leaves) mostly positive or mostly negative?

Mostly Positive

Mostly Negative

Unsure

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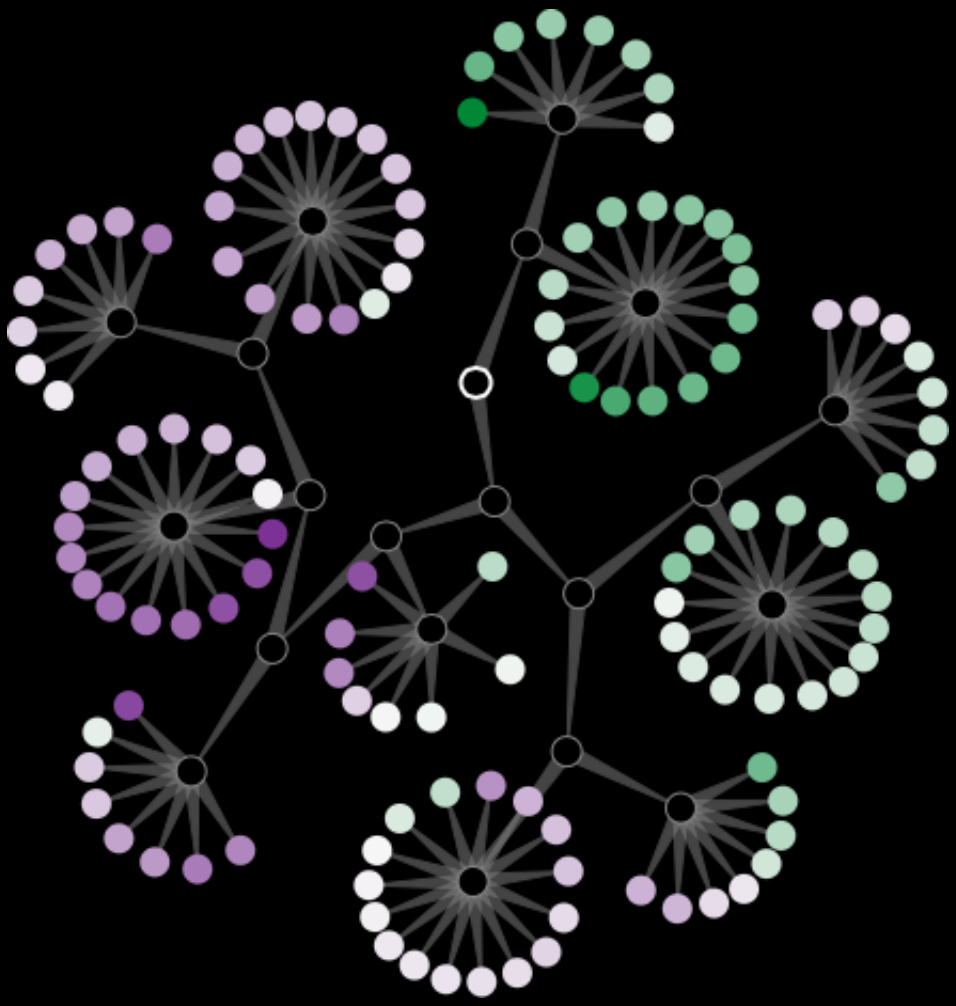

What is the height of the tree?

Task Set 2 (Training)

The following questions will help you learn how to interpret this visualization. Click

"Toggle Help" to reveal additional information that may help you answer the question.
For these questions, please try to be as **accurate** as possible.

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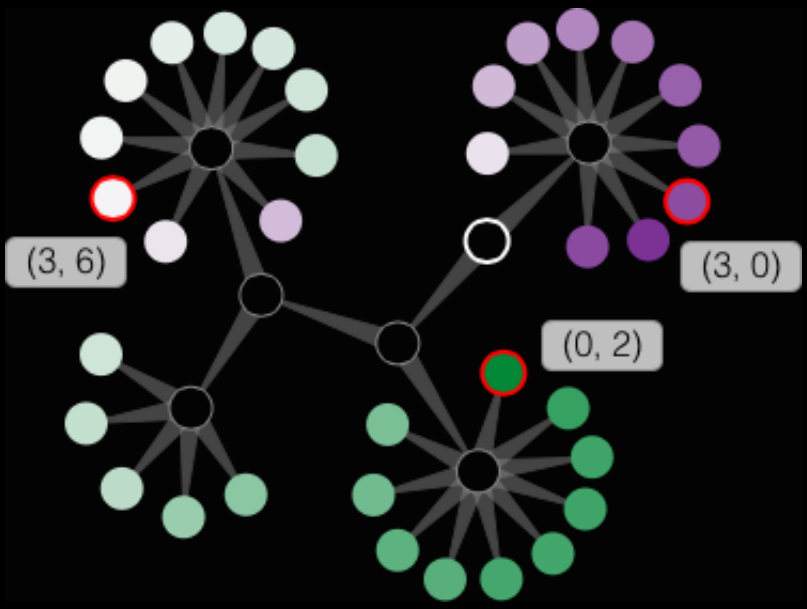

Which of the highlighted elements is furthest away from the root?

(0, 2)

(3, 0)

(3, 6)

Unsure

Choose the leaf with the most edges from it to the root.

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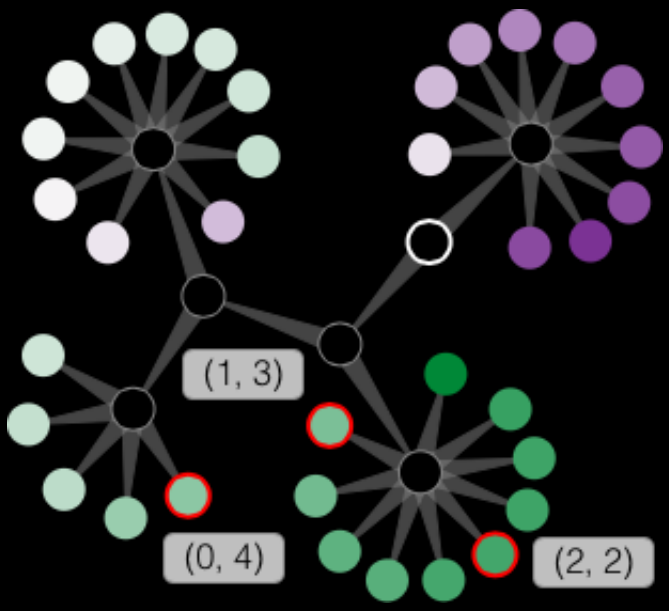

Which of the highlighted elements are siblings?

(0, 4) and (1, 3)

(1, 3) and (2, 2)

(0, 4) and (2, 2)

Unsure

Choose elements that have the same parent.

Task Set 2 (Timed)

The following questions will help us learn which tasks are difficult or time consuming when using this visualization. **Your responses will be timed.** Please try

to be as accurate and efficient as possible.

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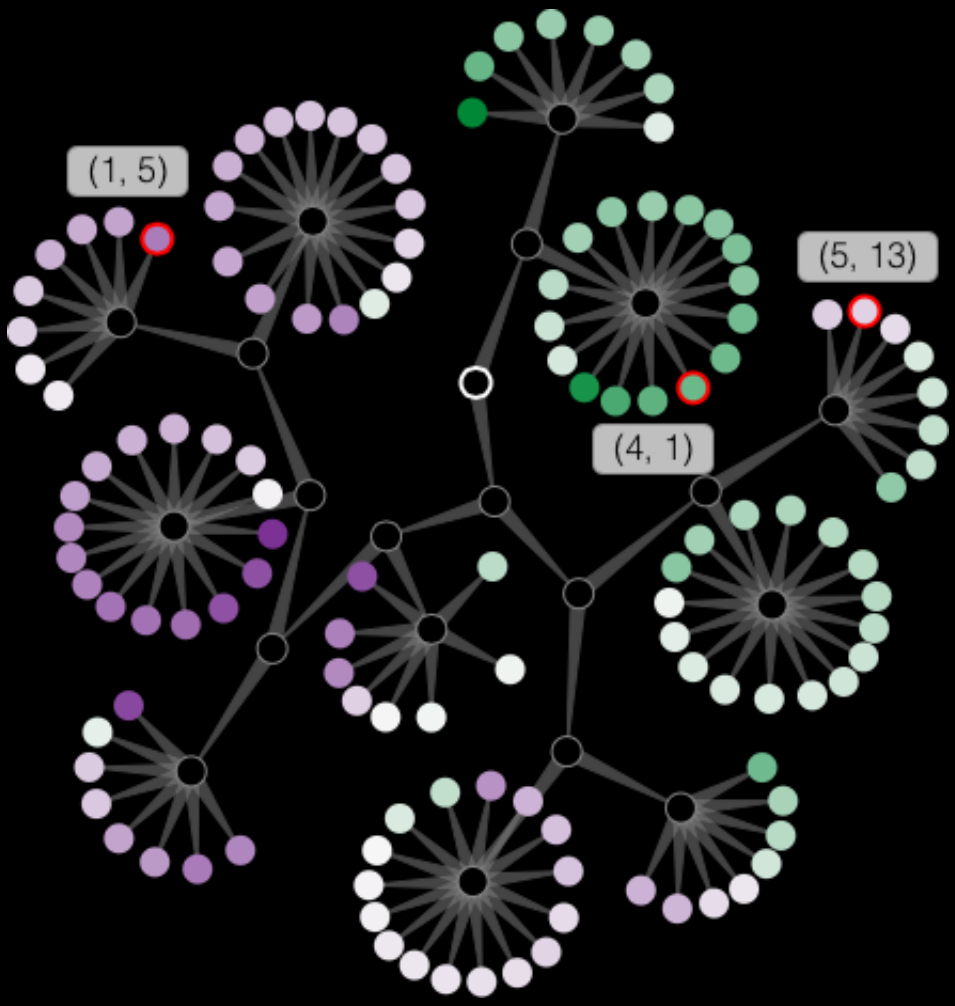

Which of the highlighted elements is furthest away from the root?

(1, 5)

(4, 1)

(5, 13)

Unsure

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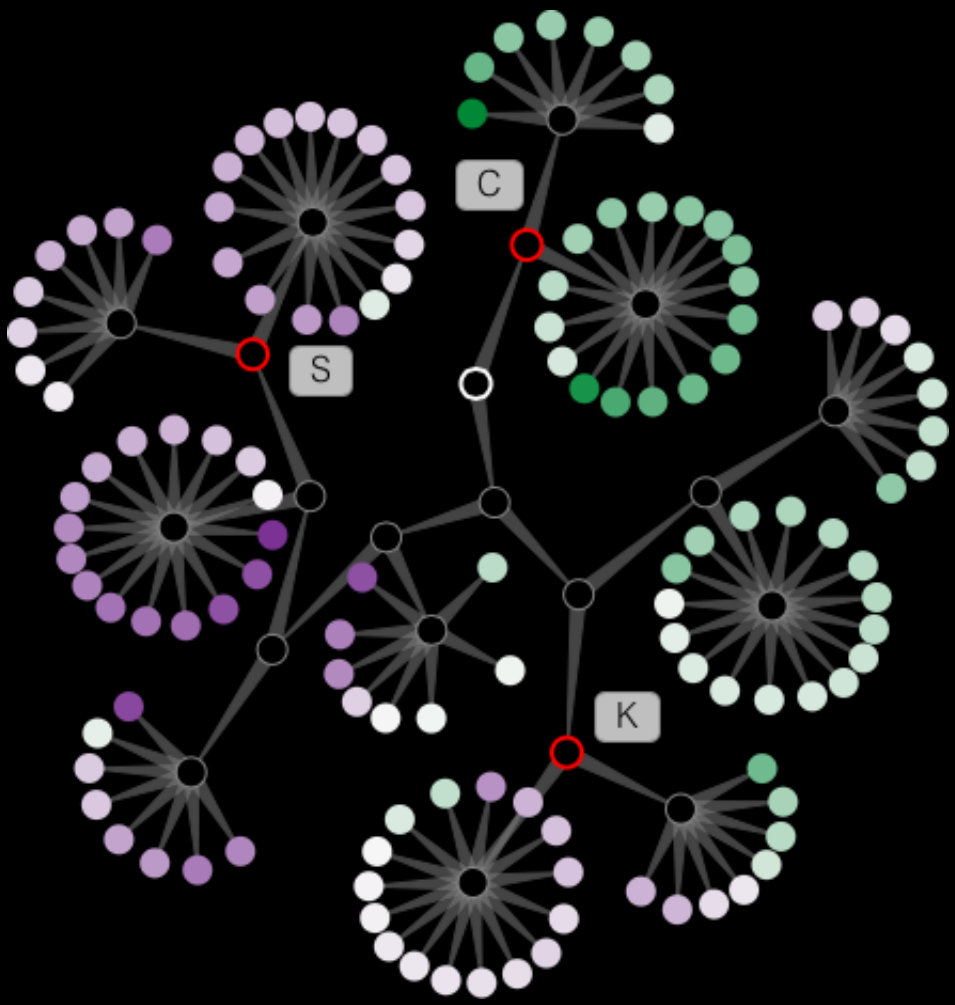

Which of the highlighted elements is furthest away from the root?

C

K

S

Unsure

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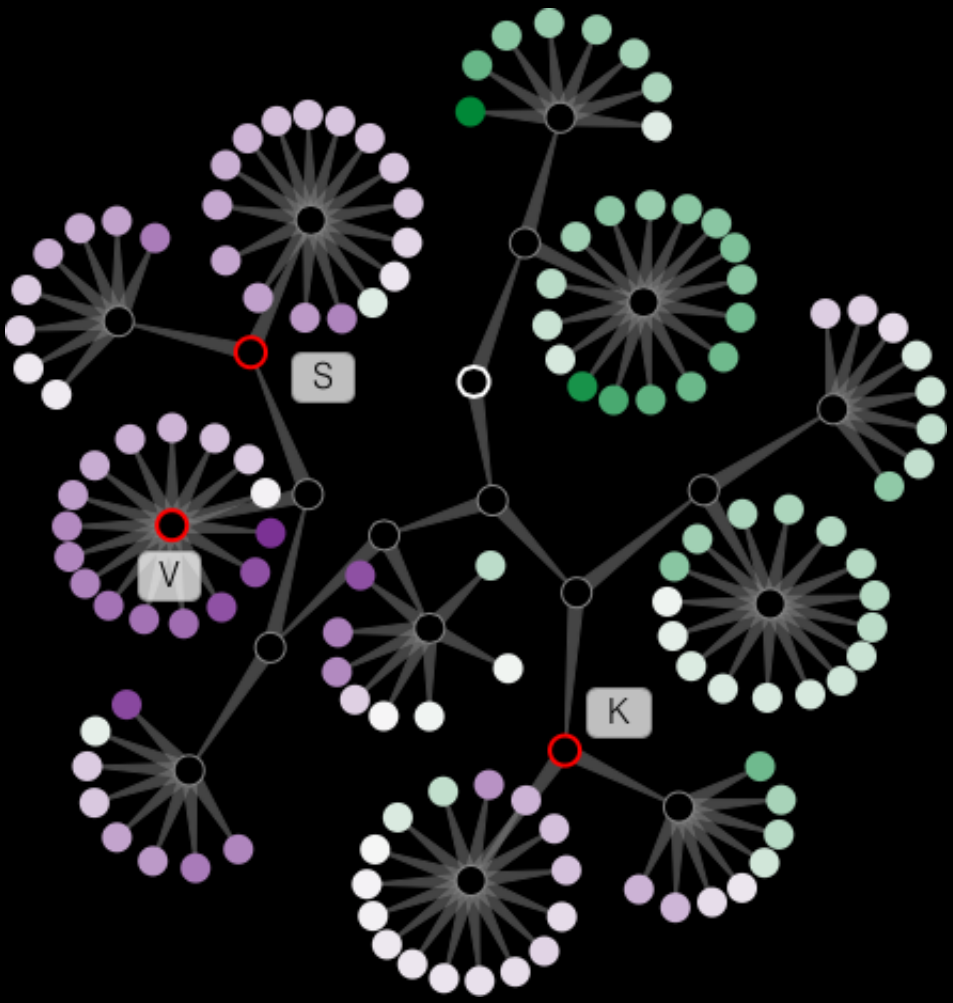

Which of the highlighted elements are siblings?

K and S

S and V

K and V

Unsure

Task Set 3 (Training)

The following questions will help you learn how to interpret this visualization. Click "Toggle Help" to reveal additional information that may help you answer the question.
For these questions, please try to be as **accurate** as possible.

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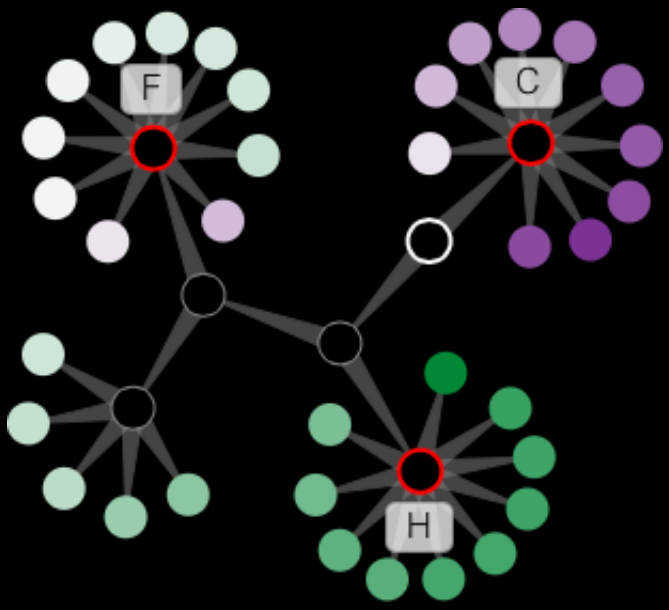

Which two of the highlighted elements are more closely clustered?

C and F

F and H

C and H

Unsure

Find the cluster that contains each pair, and choose the cluster furthest from the root.

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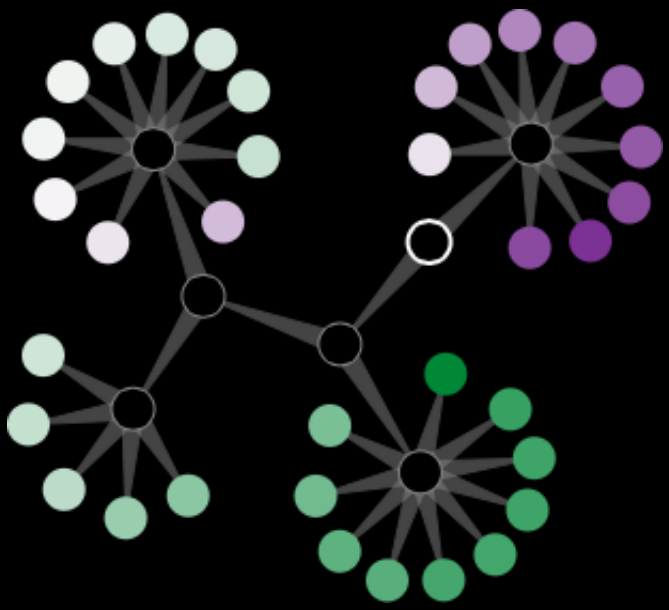

How many visually distinct clusters do you see in this visualization?

If you had to divide this data into clusters or groups based on this visualization, how many would you choose? There is no single right answer to this question.

Task Set 3 (Timed)

The following questions will help us learn which tasks are difficult or time

consuming when using this visualization. **Your responses will be timed.** Please try to be as accurate and efficient as possible.

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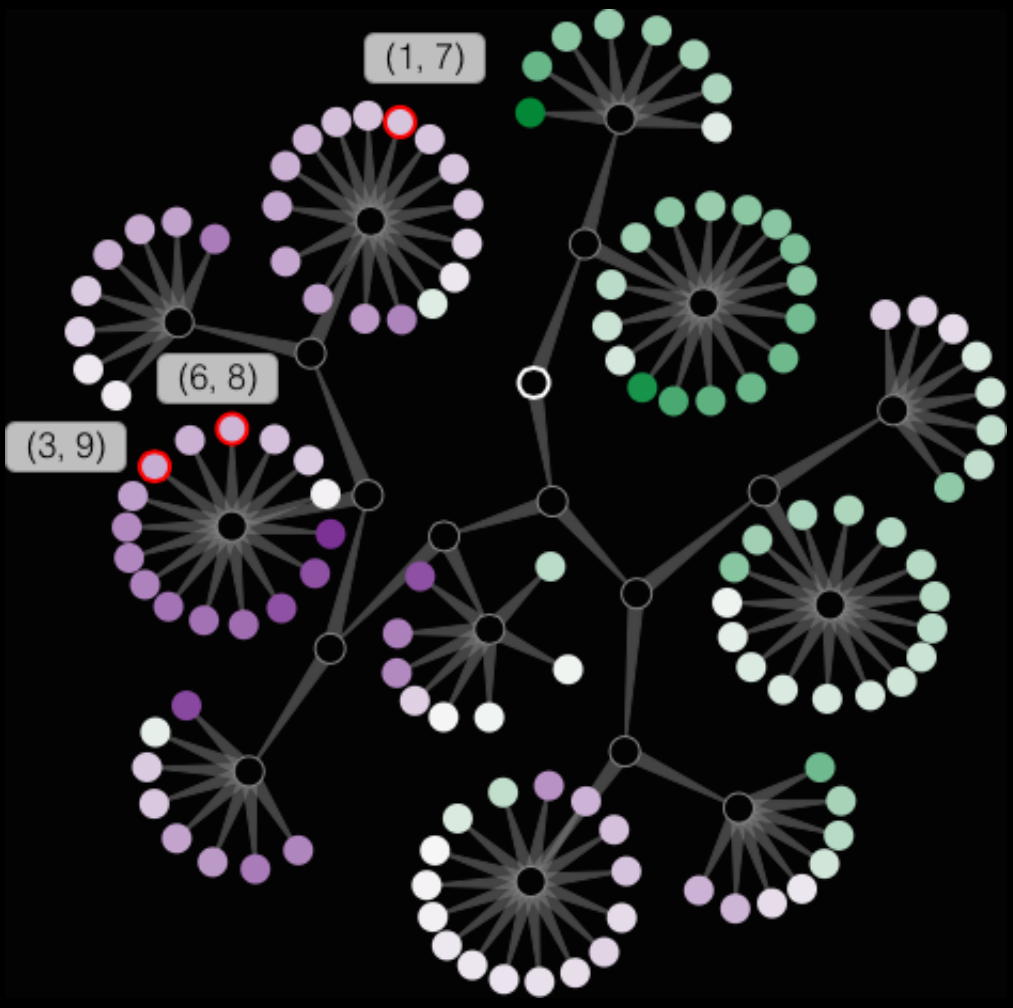

Which two of the highlighted elements are more closely clustered?

(1, 7) and (3, 9)

(3, 9) and (6, 8)

(1, 7) and (6, 8)

Unsure

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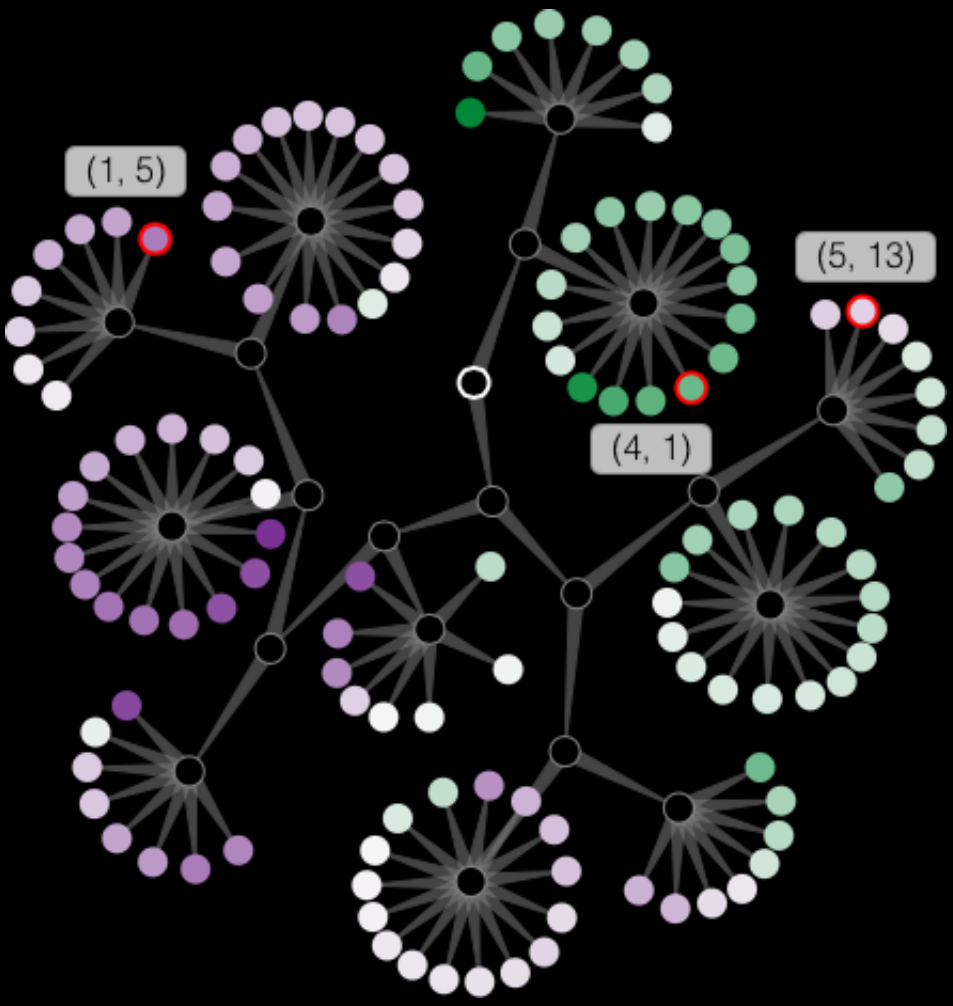

Which two of the highlighted elements are more closely clustered?

(1, 5) and (4, 1)

(4, 1) and (5, 13)

(1, 5) and (5, 13)

Unsure

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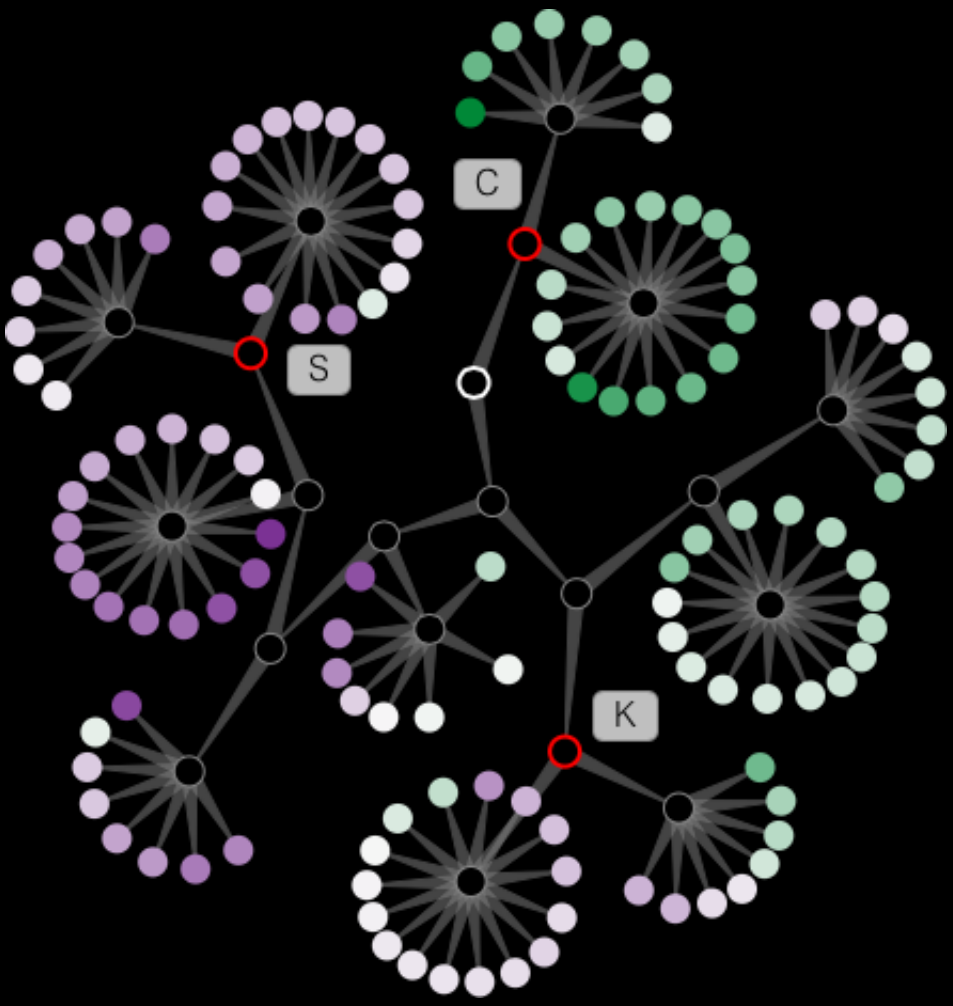

Which two of the highlighted elements are more closely clustered?

C, K

K, S

C, S

Unsure

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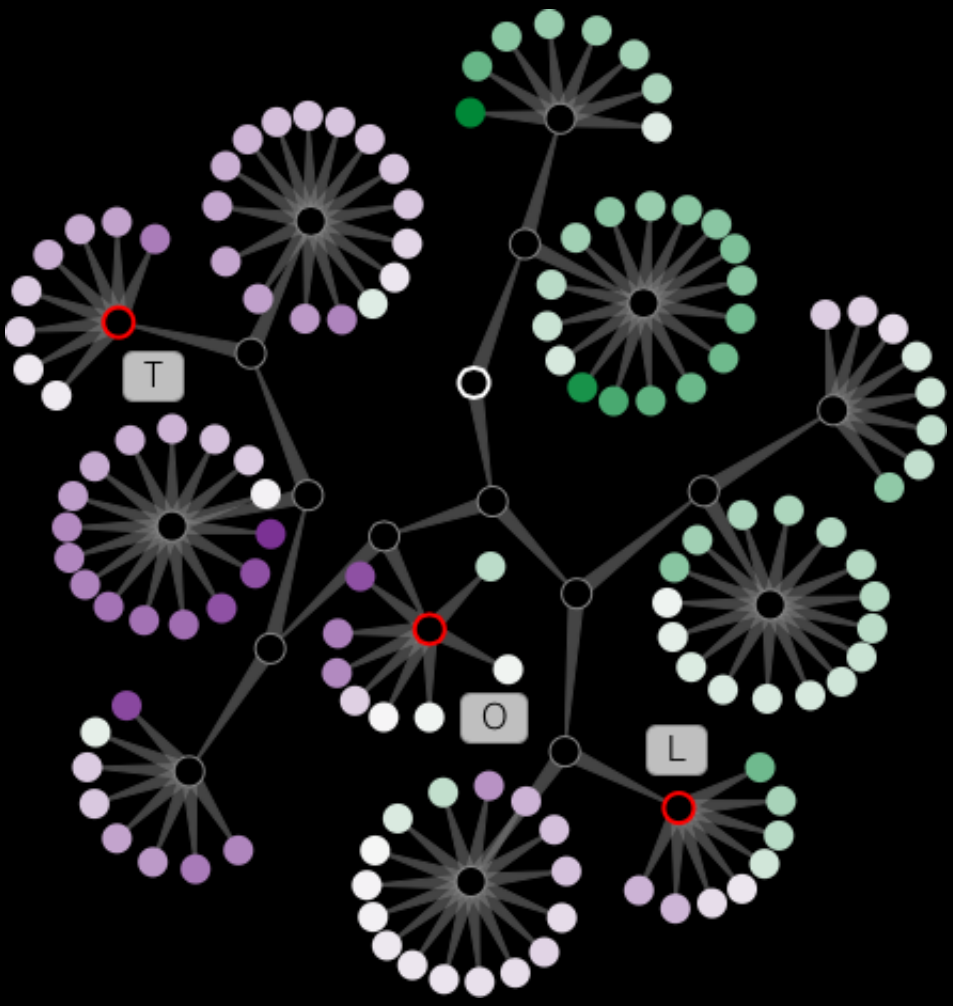

Which of the highlighted elements is **least** similar to its neighbors?

L

O

T

Unsure

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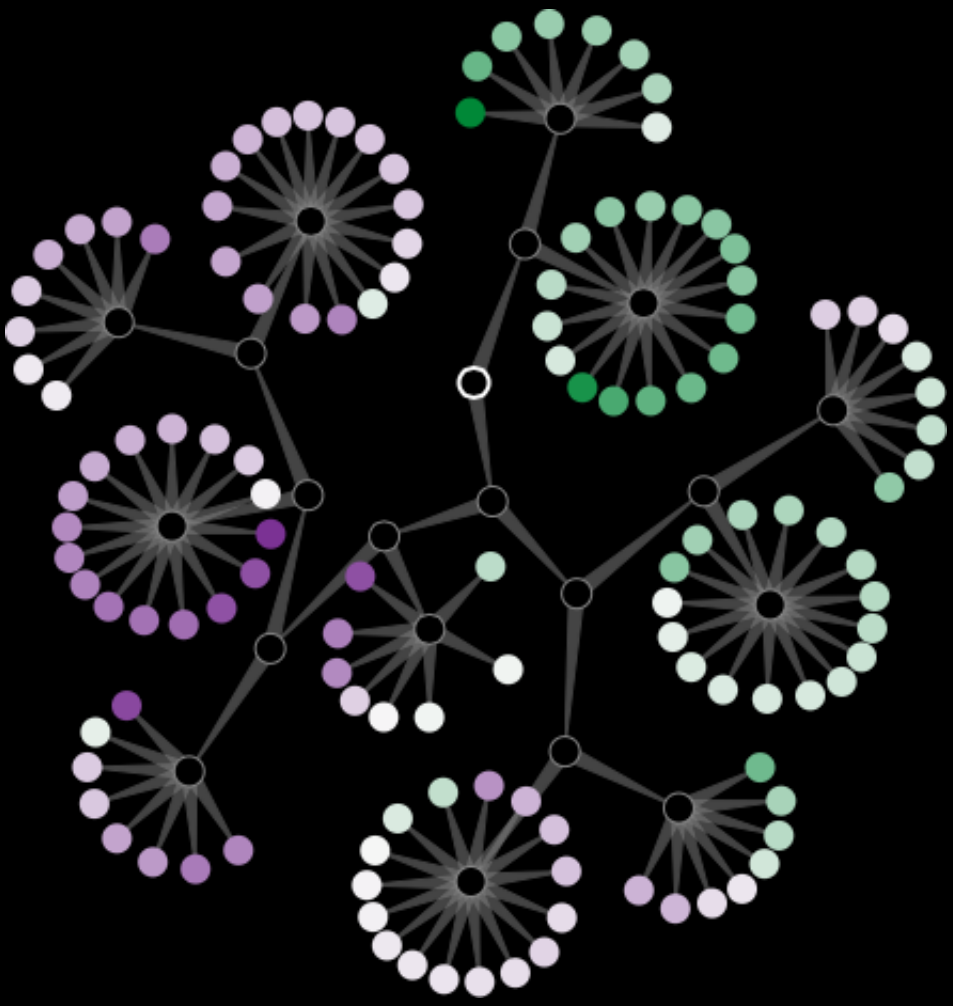

How many visually distinct clusters do you see in this visualization?