| Num of bivalent vertices: | Bit code | Vertex name | Face name (Bivalent items are italicized.) | Vertex name | Bit code |
|---|---|---|---|---|---|
| None | | | 2 | 3 | 4 |
| None | 0000 | Vector space | Logic | Set theory | 0010 |
| | 0100 | Undecidability | | Self non-refer. | 0110 |
| 2 | 0100 | Undecidability | Algebra | Self non-refer. | 0110 |
| | 0101 | Finite numbers | | Bivalency | 0111 |
| 4 | 0101 | Finite numbers | Geometry and topology | Bivalency | 0111 |
| | 0001 | Self referencing | | Decidability | 0011 |
| 2 | 0001 | Self referencing | Calculus and analysis | Decidability | 0011 |
| | 0000 | Vector space | | Set theory | 0010 |
| 4 | 1000 | Replication | Radix $_\varphi$ arithmetic | Recursion | 1010 |
| | 1100 | Comb. obj. proc. | | Persistent object | 1110 |
| 4 | 1100 | Comb. obj. proc. | Hardware | Persistent object | 1110 |
| | 1101 | Volatile object | | Arithmetic proc. | 1111 |
| 4 | 1101 | Volatile object | Turing | Arithmetic proc. | 1111 |
| | 1001 | Iteration | | Assignment | 1011 |
| 4 | 1001 | Iteration | Software | Assignment | 1011 |
| | 1000 | Replication | | Recursion | 1010 |
| 4 | 1110 | Persistent object | Sequential state machine | Recursion | 1010 |

| | Left | Theory | Right | |
|---|---|---|---|---|
| | 1111 Arithmetic proc. | | Assignment | 1011 |
| 4 | 0001 Self referencing | | Decidability | 0011 |
| | | Game theory | | |
| | 1001 Iteration | | Assignment | 1011 |
| 4 | 0101 Finite numbers | | Bivalency | 0111 |
| | | Signal processing | | |
| | 1101 Volatile object | | Arithmetic proc. | 1111 |
| 4 | 0111 Bivalency | | Decidability | 0011 |
| | | Cryptology | | |
| | 1111 Arithmetic proc. | | Assignment | 1011 |
| 4 | 0001 Self referencing | | Finite numbers | 0101 |
| | | Information theory | | |
| | 1001 Iteration | | Volatile object | 1101 |
| 3 | 0000 Vector space | | Self referencing | 0110 |
| | | Dynamical systems | | |
| | 1000 Replication | | Iteration | 1001 |
| 3 | 0011 Decidability | | Set theory | 0010 |
| | | Probability | | |
| | 1011 Assignment | | Recursion | 1010 |
| 2 | 0010 Set theory | | Vector space | 0000 |
| | | Differential equations | | |
| | 1010 Recursion | | Replication | 1000 |
| 2 | 0011 Decidability | | Set theory | 0010 |
| | | Combinatronics | | |
| | 0111 Bivalency | | Self non-refer. | 0110 |
| 2 | 0100 Undecidability | | Self non-refer. | 0110 |
| | | Mathematical physics | | |
| | 1100 Comb.obj.proc. | | Persistent object | 1110 |

|   | | | | |
|---|---|---|---|---|
| 3 | 0101 *Finite numbers* | | Undecidability 0100 | |
|   | | Statistics | | |
|   | 1101 *Volatile objects* | | *Combin. obj. proc.* 1100 | |

|   | | | | |
|---|---|---|---|---|
| 2 | 0100 Undecidability | | Vector space 0000 | |
|   | | Quantum logic | | |
|   | 1100 *Combin. obj. proc.* | | *Replication* 1000 | |

|   | | | | |
|---|---|---|---|---|
| 2 | 0101 *Finite numbers* | | *Self-referencing* 0001 | |
|   | | Number theory | | |
|   | 0100 Undecidability | | Vector space 0000 | |

|   | | | | |
|---|---|---|---|---|
| 3 | 0110 Self non refer. | | *Bivalency* 0111 | |
|   | | Computing | | |
|   | 1110 *Persistent object* | | *Arithmetic proc.* 1111 | |

|   | | | | |
|---|---|---|---|---|
| 2 | 0010 Set theory | | Self non-refer. 0110 | |
|   | | Operations research | | |
|   | 1010 *Recursion* | | *Persistent object* 1110 | |

|   | | | | |
|---|---|---|---|---|
| 4 | 1000 *Replication* | | *Iteration* 1001 | |
|   | | *interface* | | |
|   | 1100 *Combin. obj. proc.* | | *Volatile object* 1101 | |

## Summary and Breakdown

The 5- bivalent branches of mathematics:
  Geometry and Topology; Information Theory; Game Theory;
  Cryptology;  Signal Processing

The 6- bivalent branches of computer science:
  Turing Machine; Software; Hardware;
  Interface; Sequential State Machine;  $Radix_\phi$ Arithmetic

13-non bivalent branches of mathematics (ranked by number of bivalent vertices):
  4 (3) Dynamical Systems; Probability; Statistics; Computing
  8 (2) Algebra; Calculus and Analysis; Differential Equations; Combinatronics;
    Mathematical Physics; Quantum Logic; Number Theory; Operations Research
  1 (None) Logic

Total 24- faces of   the tesseract