

Pitagoric Tensegrity Modules

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May 2011

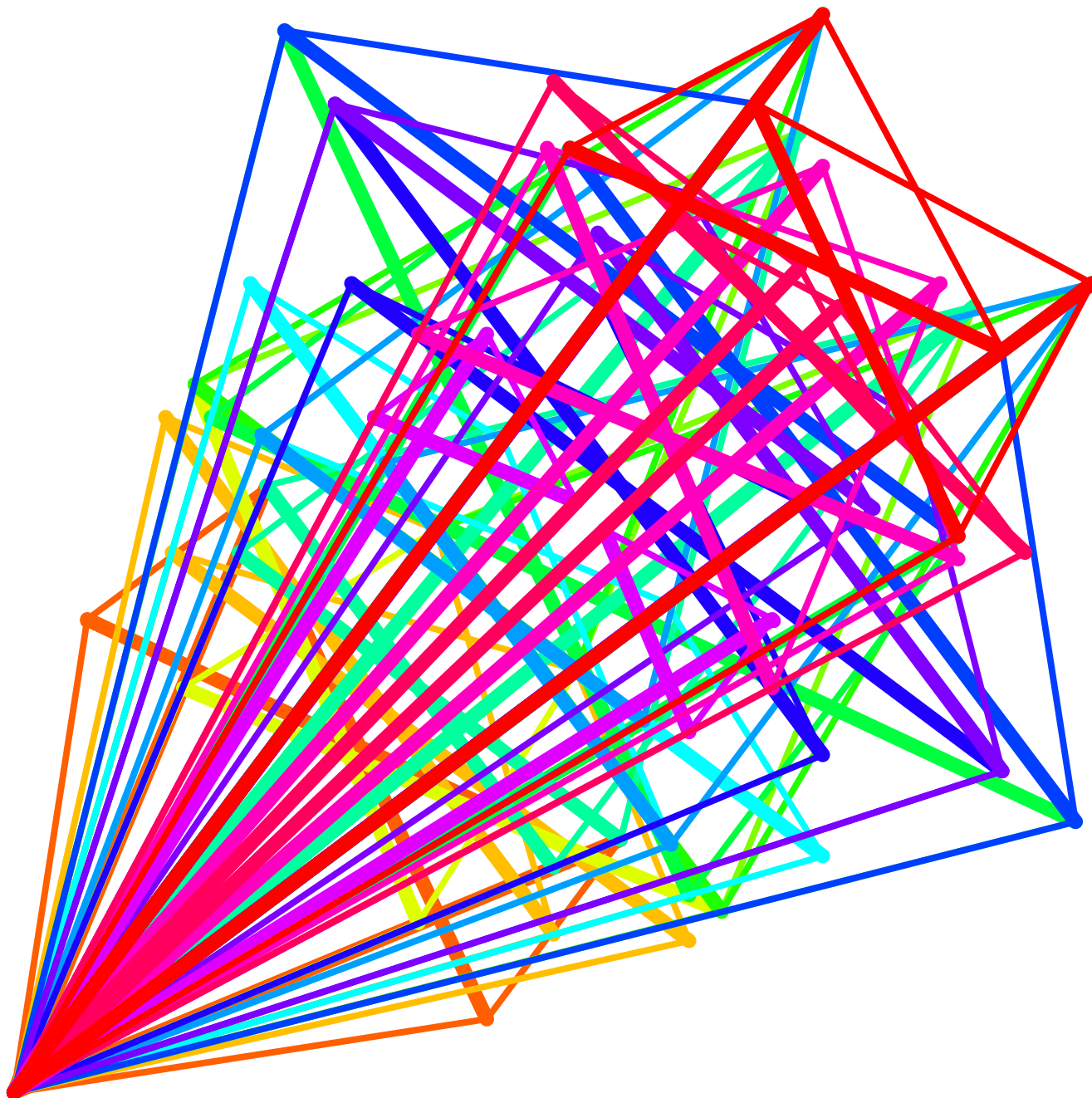
*Università di Bergamo, Facoltà di Ingegneria (Dalmine),
Dipartimento di Progettazione e Tecnologie,
I-24044 Dalmine, Italy*

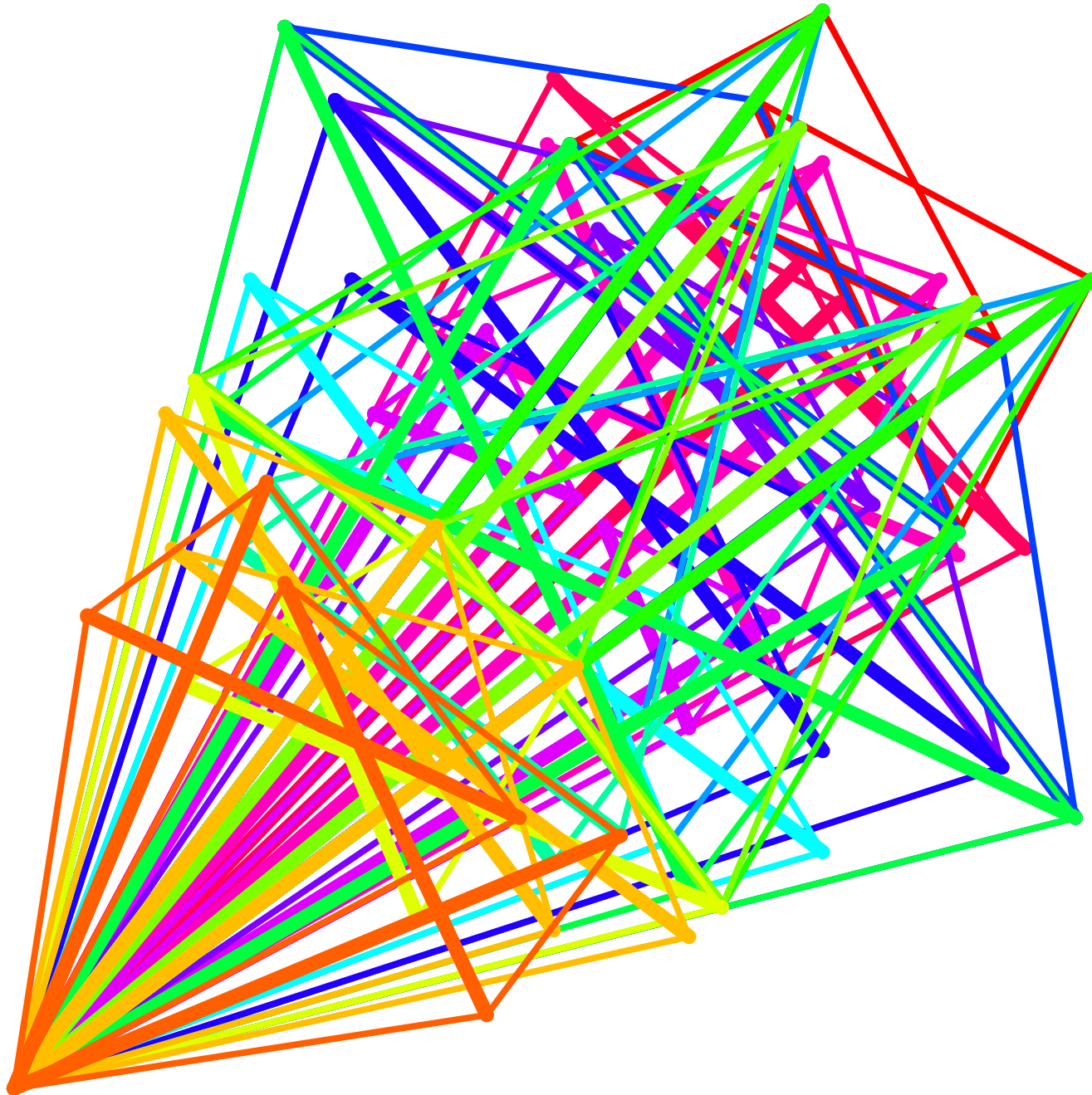
<http://www.unibg.it/pers/?egidio.rizzi>
egidio.rizzi@unibg.it



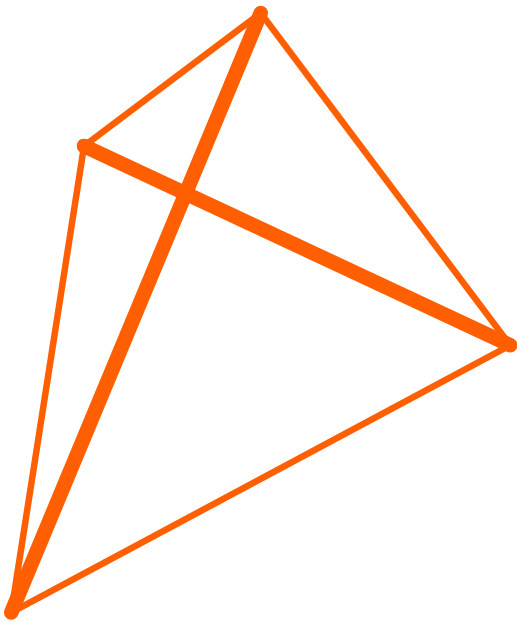
CONCEPT

- one-redundant 2D module
- pitagoric triples in the reference system
- all elements of integer length
- all inclined, non-parallel elements



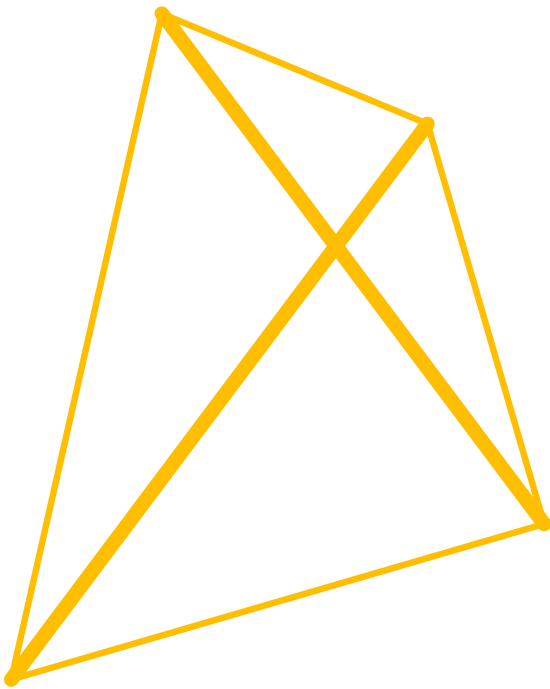


1a



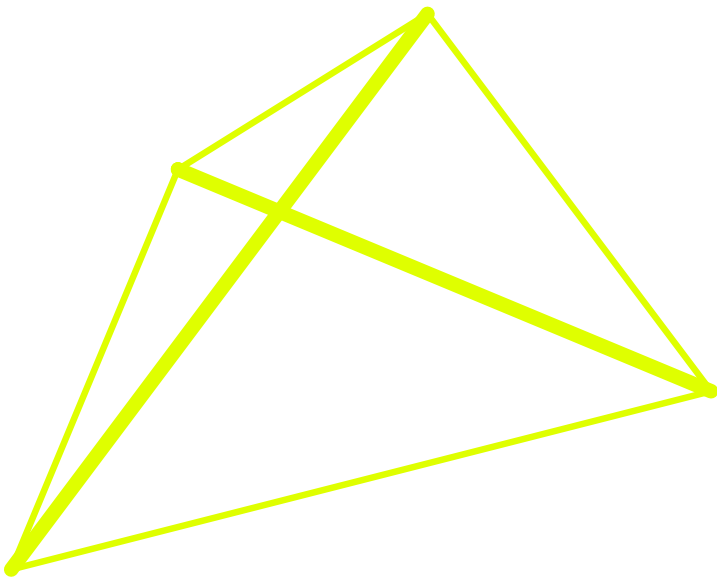
$\{\{13, 84, 85\}, \{45, 108, 117\}, \{90, 48, 102\}\}$

2a



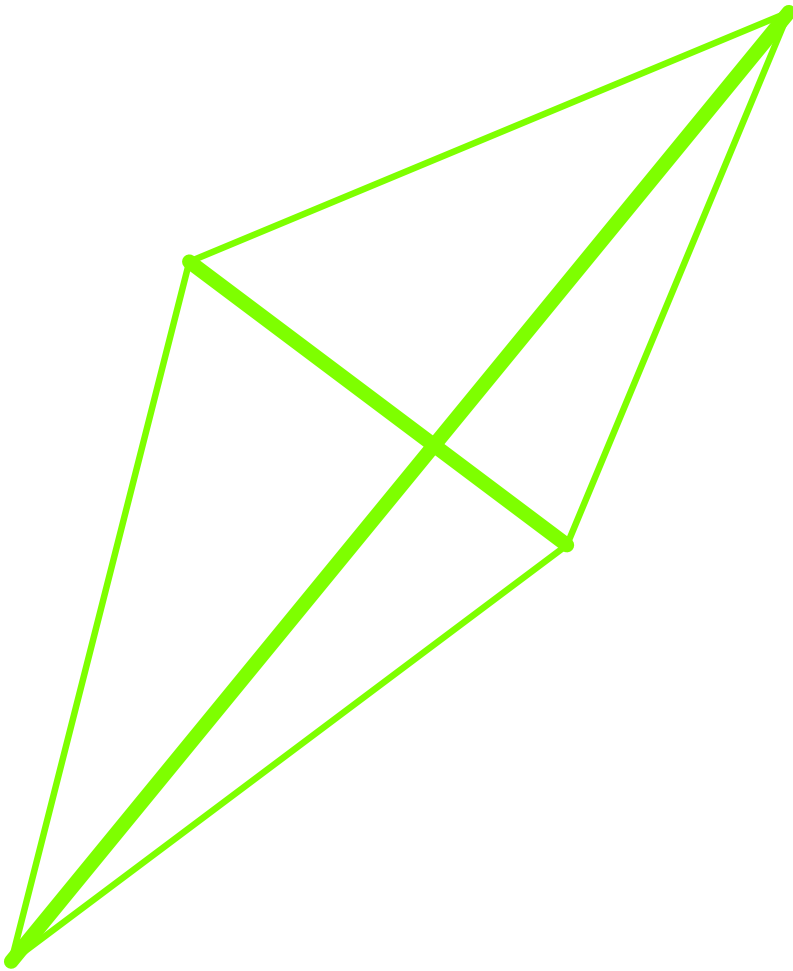
$\{\{27, 120, 123\}, \{75, 100, 125\}, \{96, 28, 100\}\}$

3a



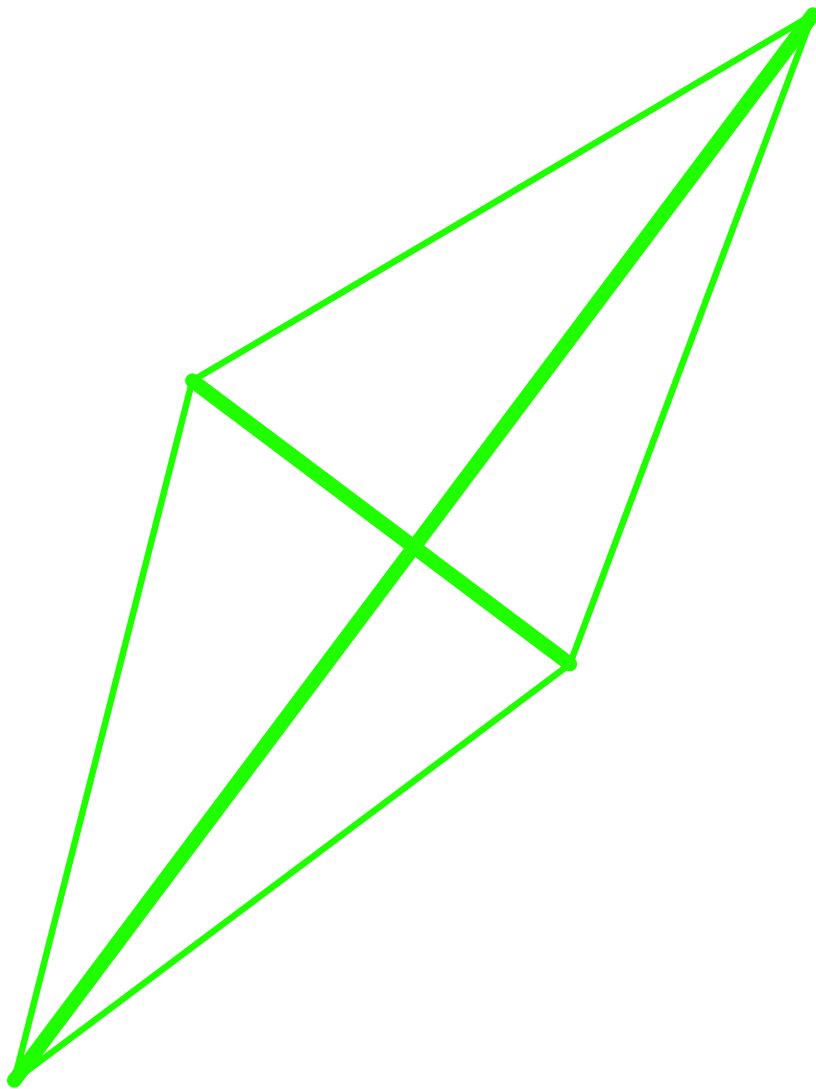
$\{\{30, 72, 78\}, \{75, 100, 125\}, \{126, 32, 130\}\}$

4a



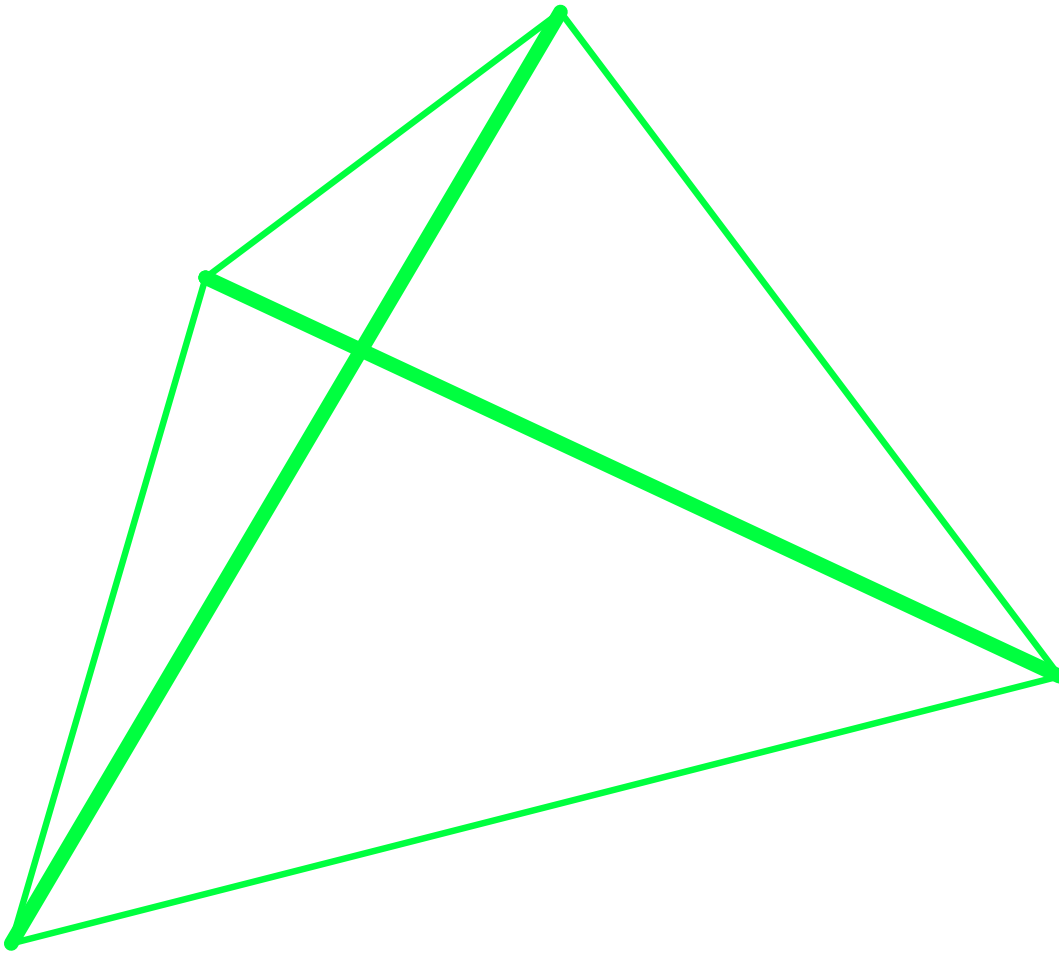
$\{\{32, 126, 130\}, \{100, 75, 125\}, \{140, 171, 221\}\}$

5a



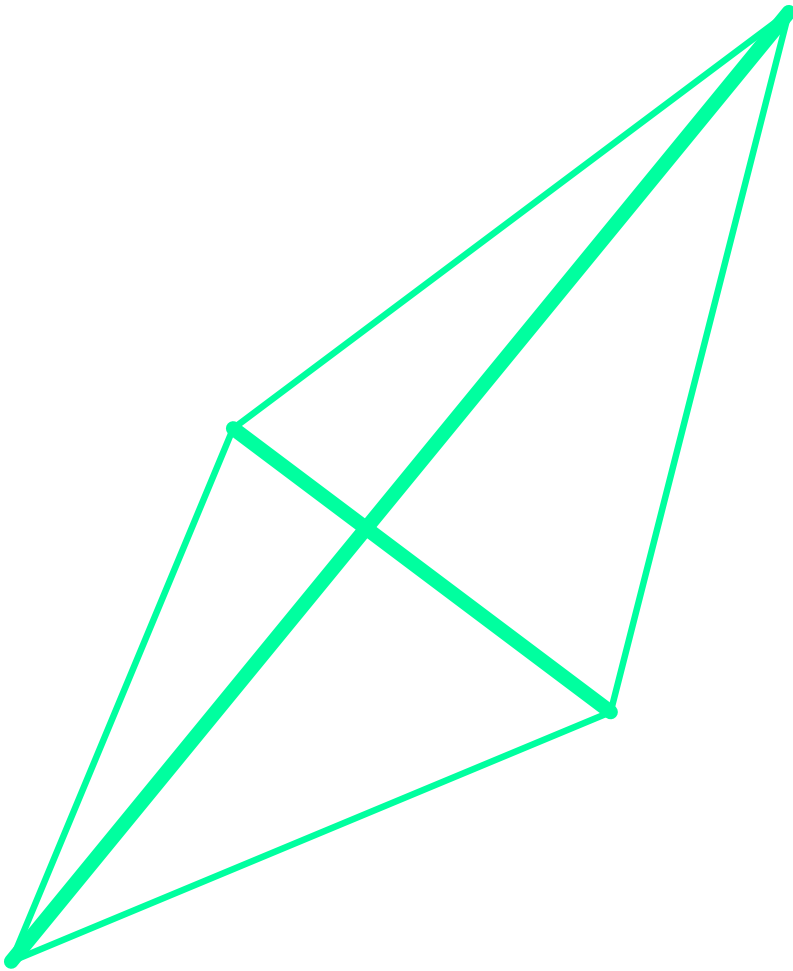
$\{\{32, 126, 130\}, \{100, 75, 125\}, \{144, 192, 240\}\}$

6a



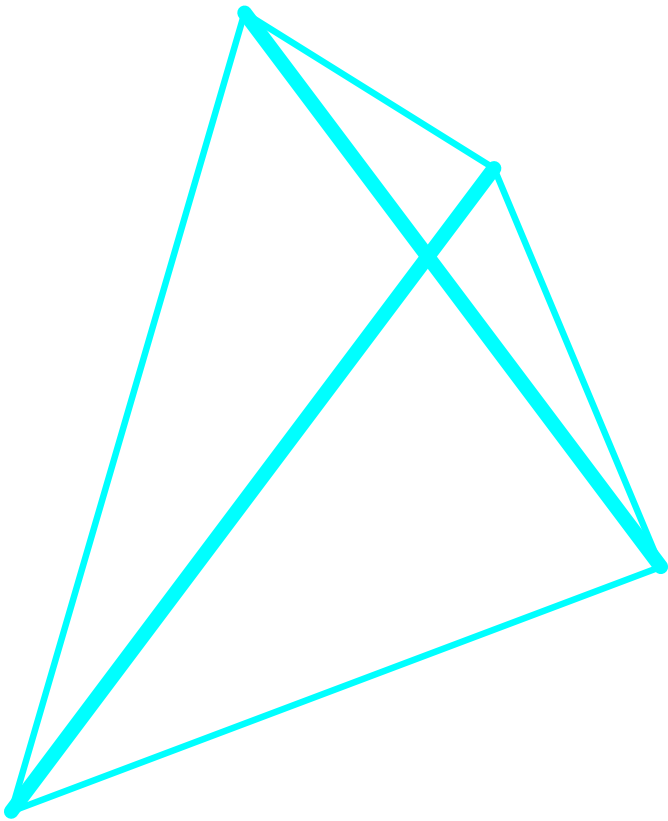
$\{\{35, 120, 125\}, \{99, 168, 195\}, \{189, 48, 195\}\}$

7a



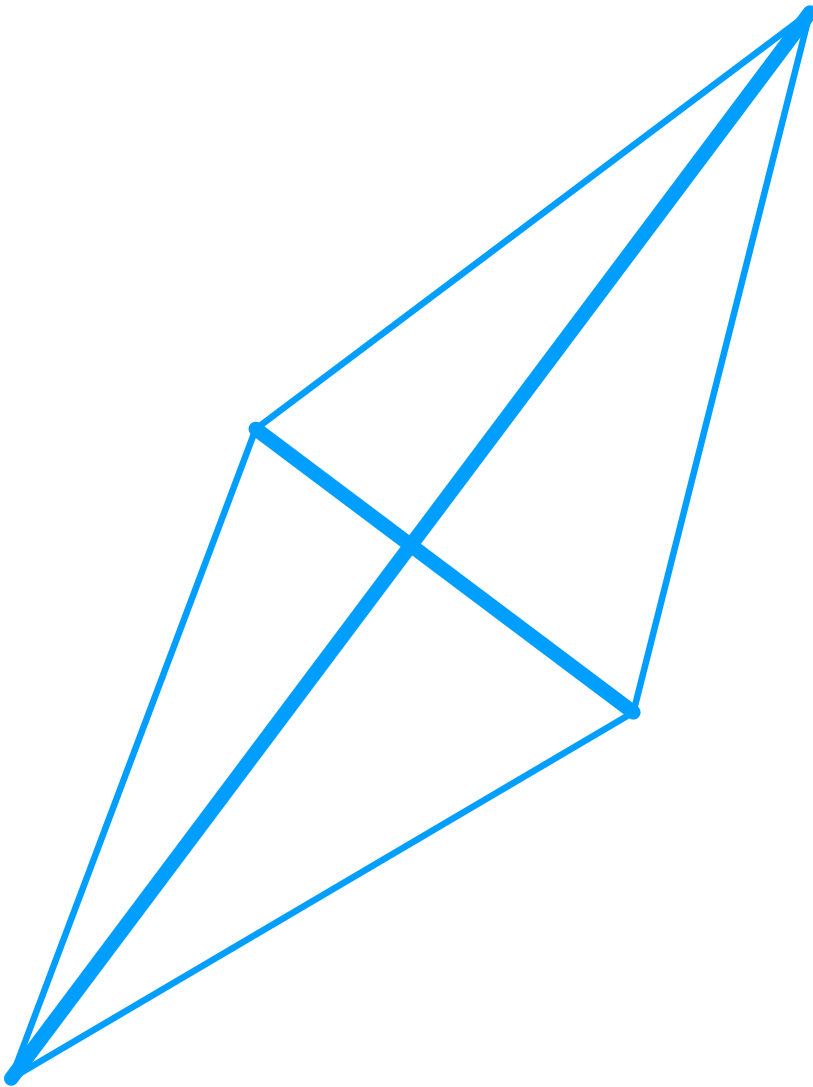
$\{\{40, 96, 104\}, \{108, 45, 117\}, \{140, 171, 221\}\}$

8a



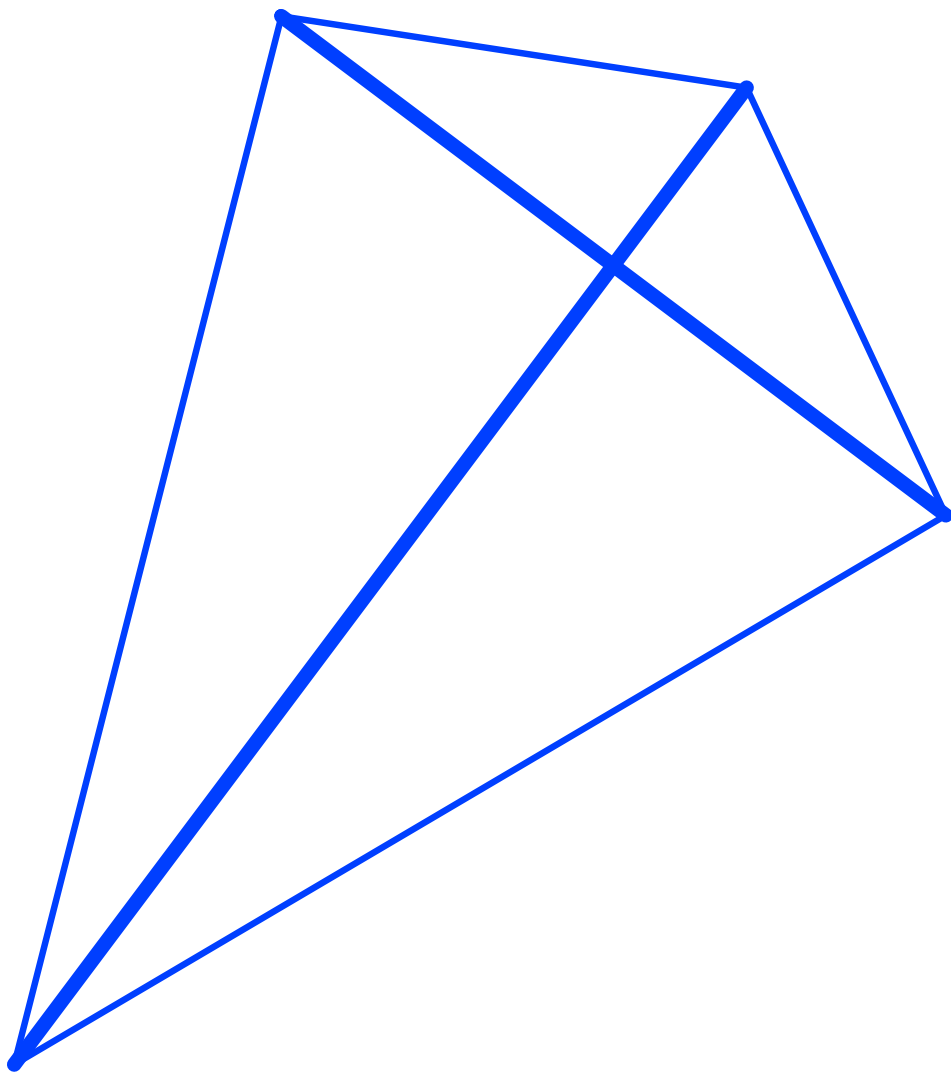
$\{\{42, 144, 150\}, \{87, 116, 145\}, \{117, 44, 125\}\}$

9a



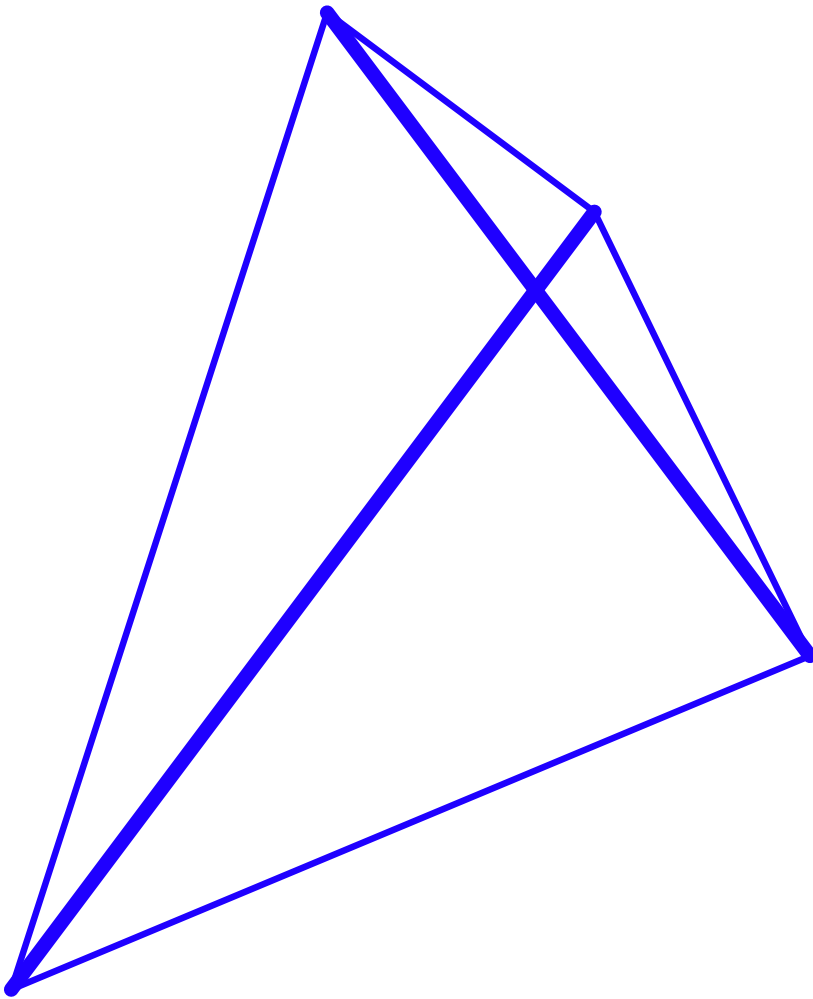
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10a



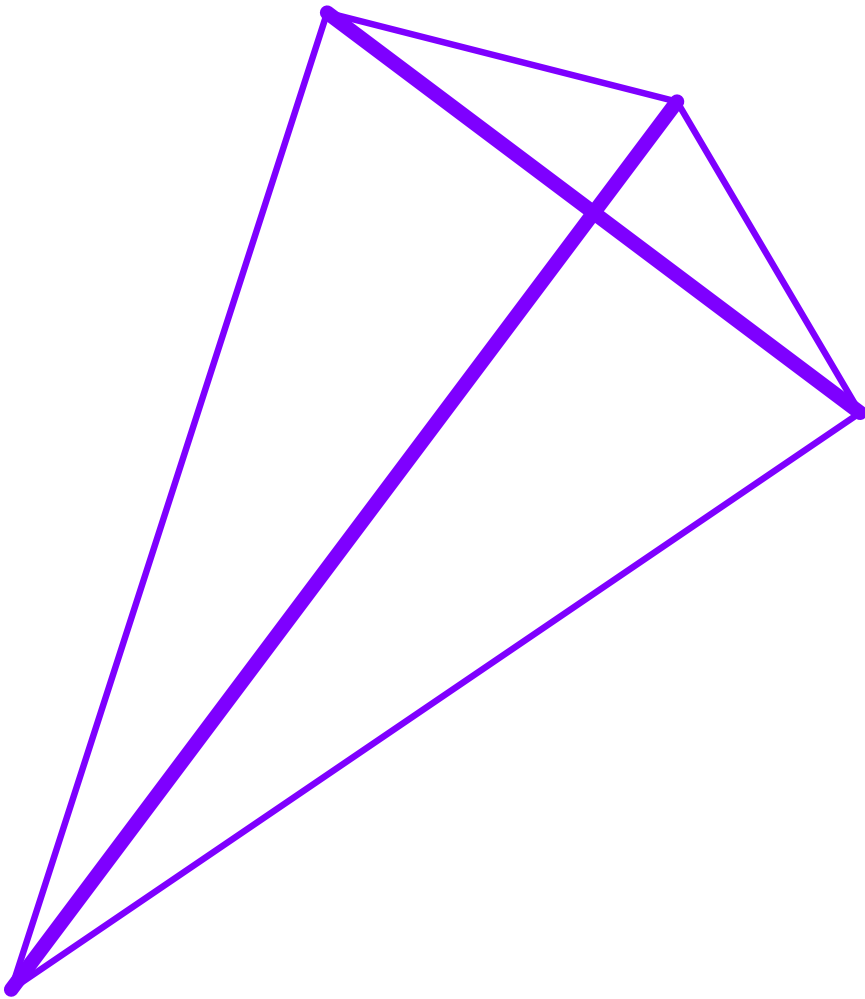
$\{\{48, 189, 195\}, \{132, 176, 220\}, \{168, 99, 195\}\}$

11a



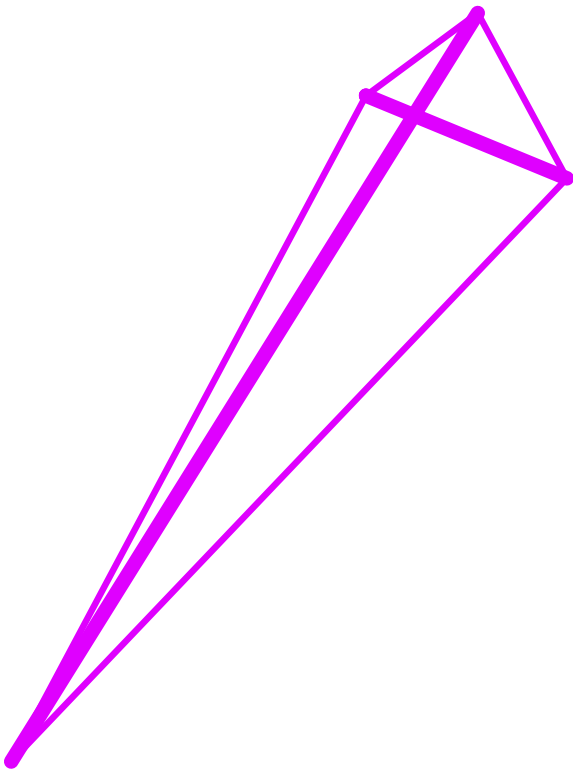
$\{\{57, 176, 185\}, \{105, 140, 175\}, \{144, 60, 156\}\}$

12a



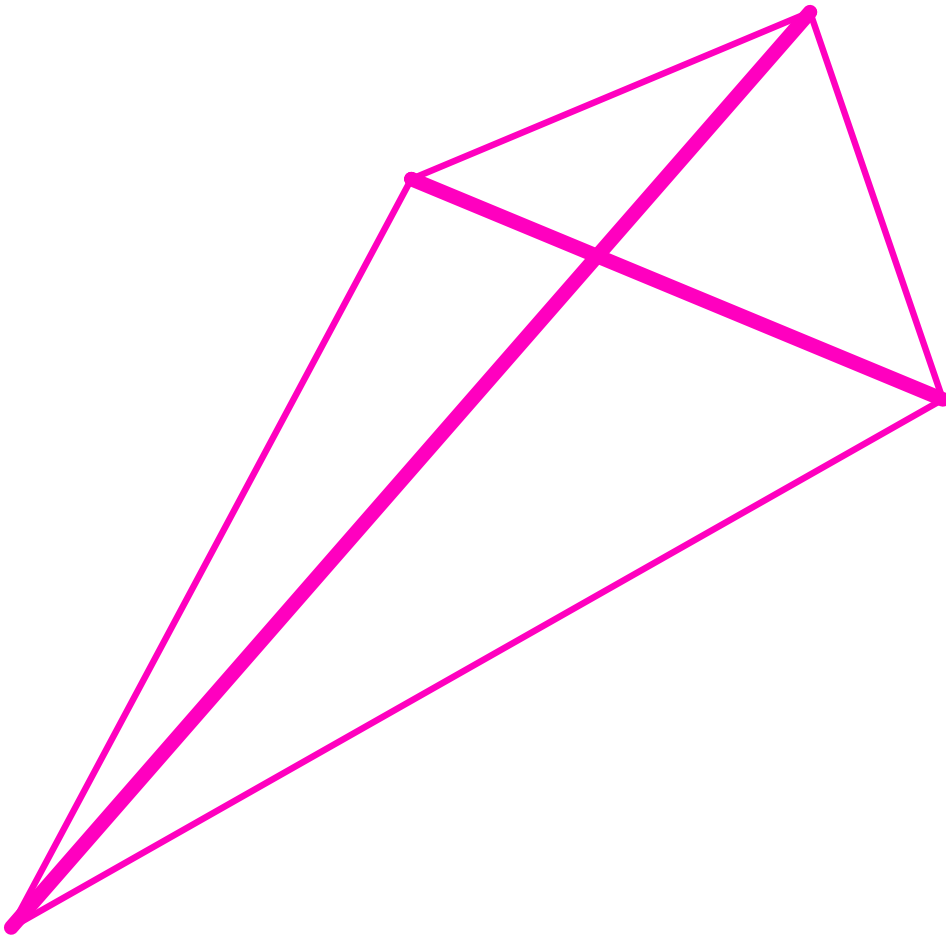
$\{\{57, 176, 185\}, \{120, 160, 200\}, \{153, 104, 185\}\}$

13a



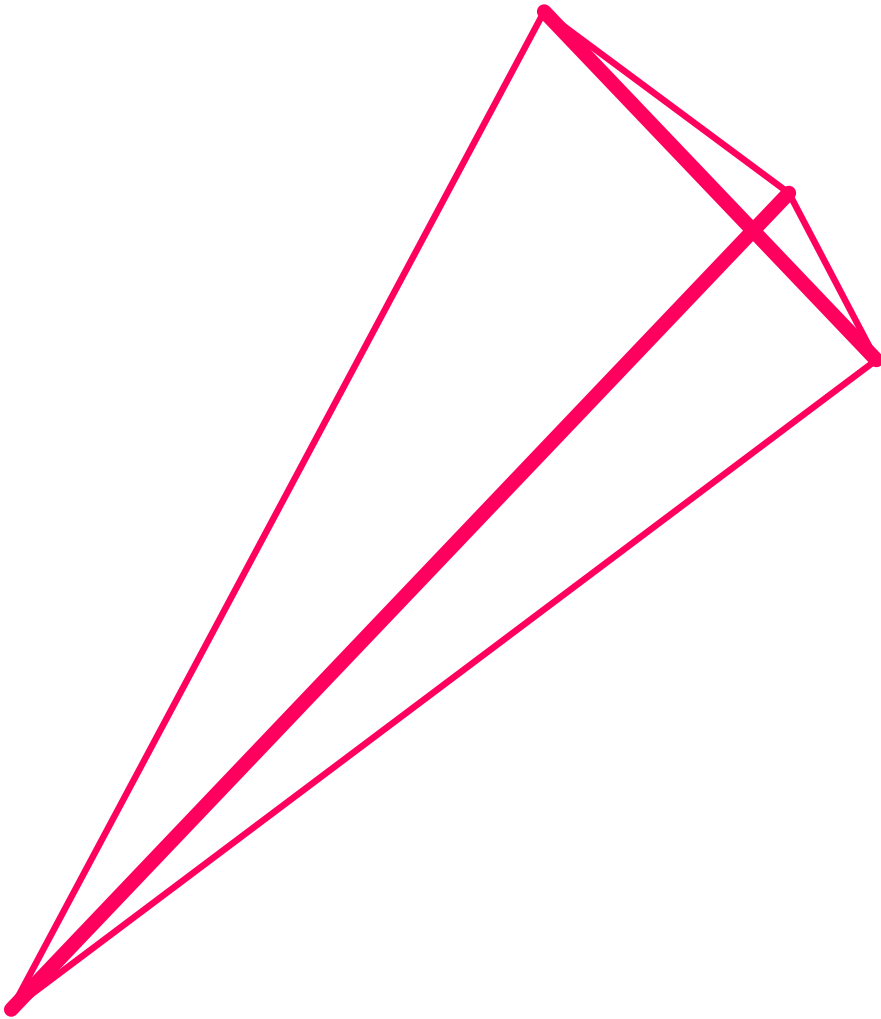
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14a



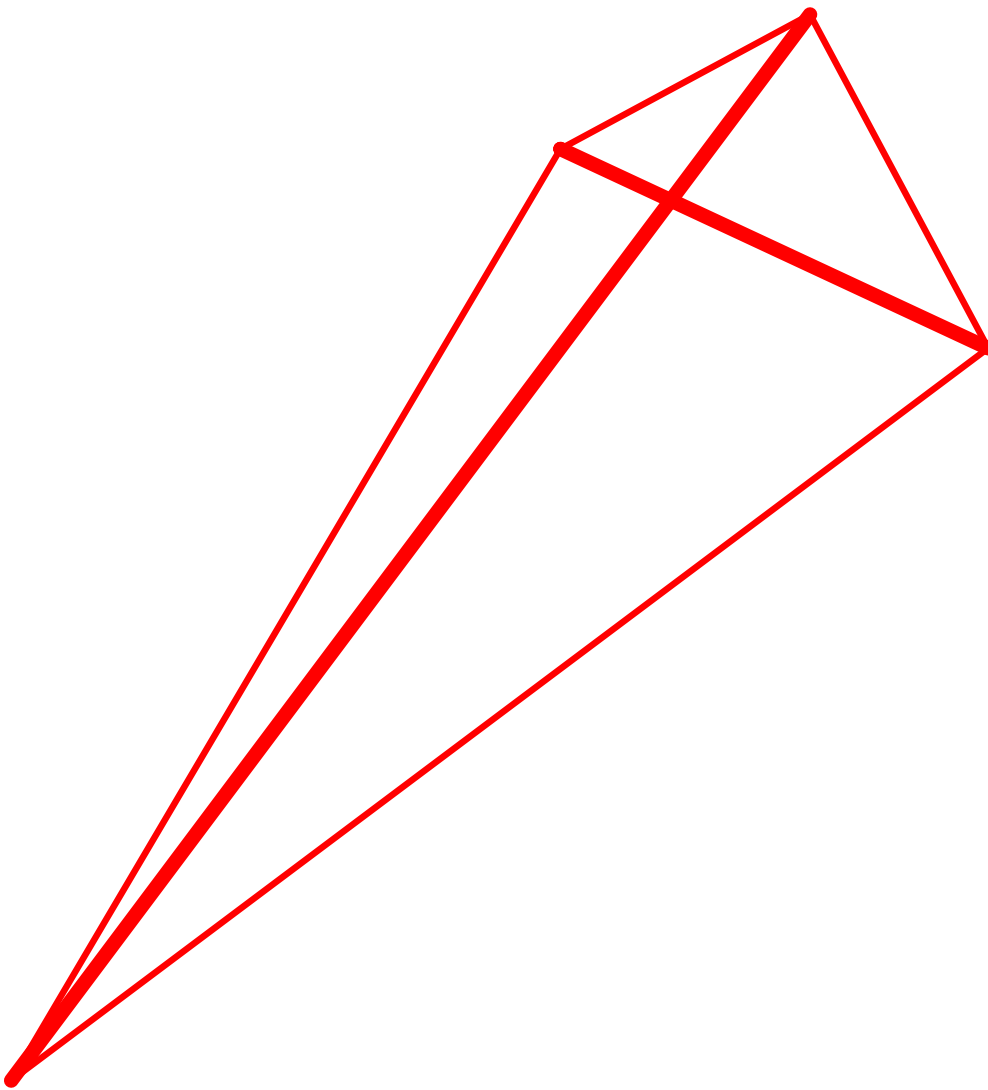
$\{\{72, 135, 153\}, \{144, 165, 219\}, \{168, 95, 193\}\}$

15a



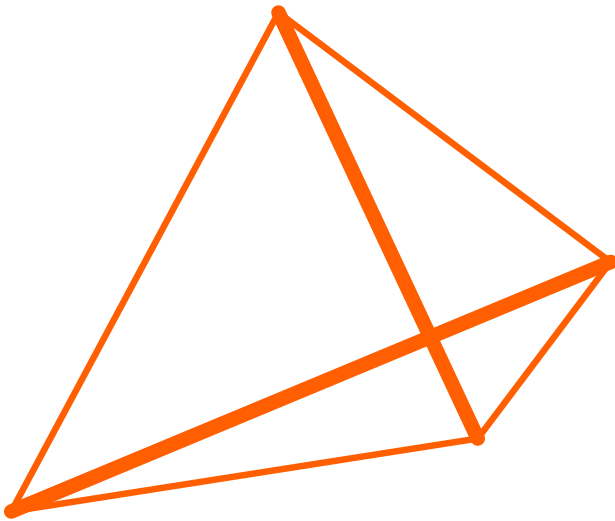
$\{\{96, 180, 204\}, \{140, 147, 203\}, \{156, 117, 195\}\}$

16a



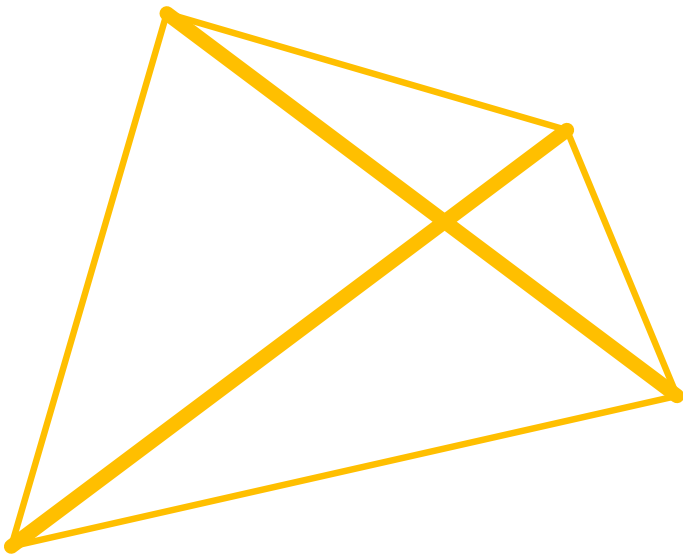
$\{\{99, 168, 195\}, \{144, 192, 240\}, \{176, 132, 220\}\}$

1b



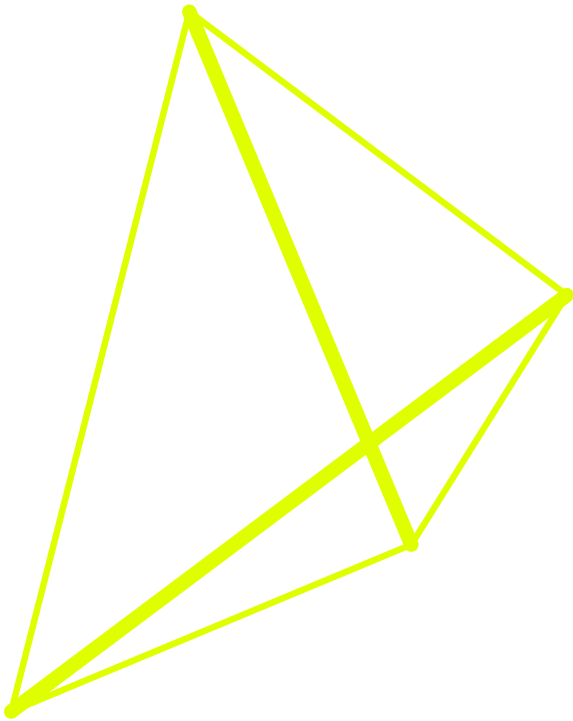
$\{\{48, 90, 102\}, \{84, 13, 85\}, \{108, 45, 117\}\}$

2b



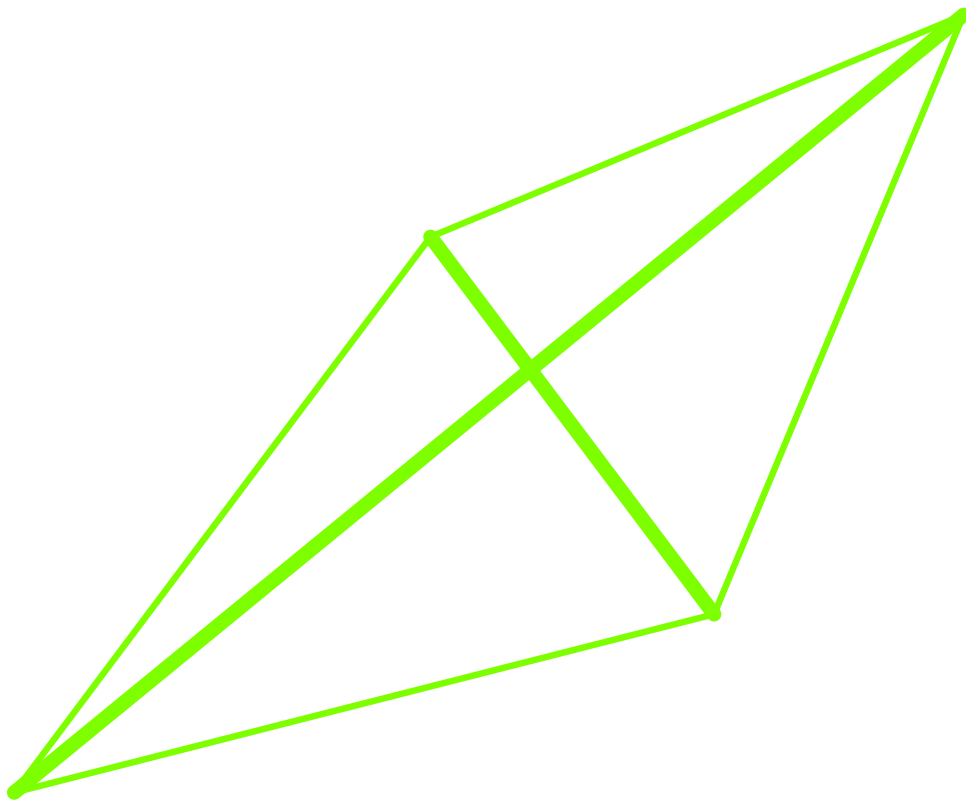
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3b



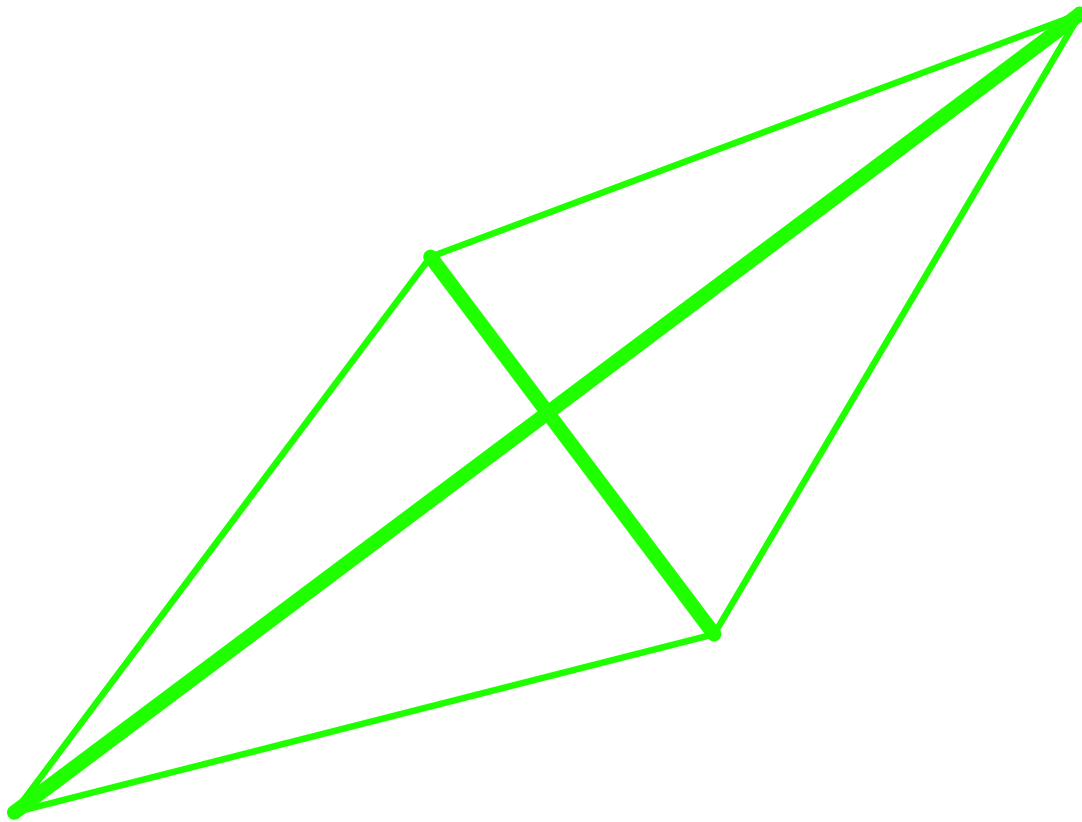
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4b



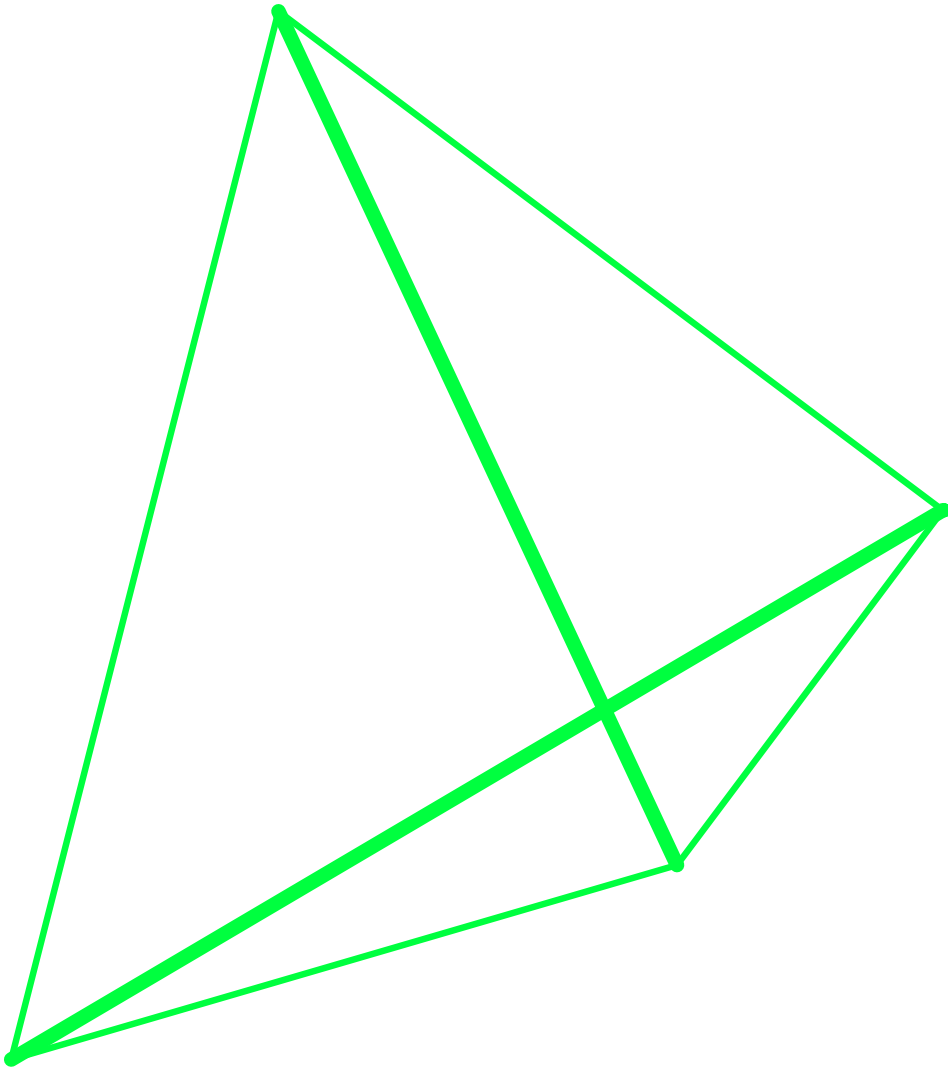
$\{\{75, 100, 125\}, \{126, 32, 130\}, \{171, 140, 221\}\}$

5b

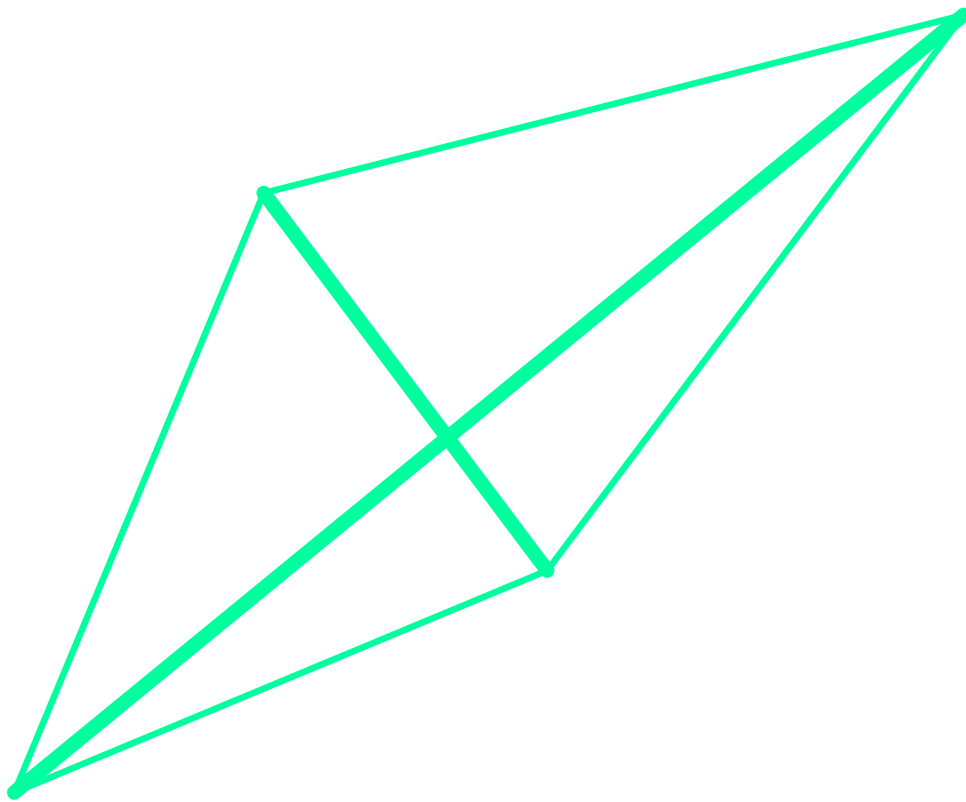


$\{\{75, 100, 125\}, \{126, 32, 130\}, \{192, 144, 240\}\}$

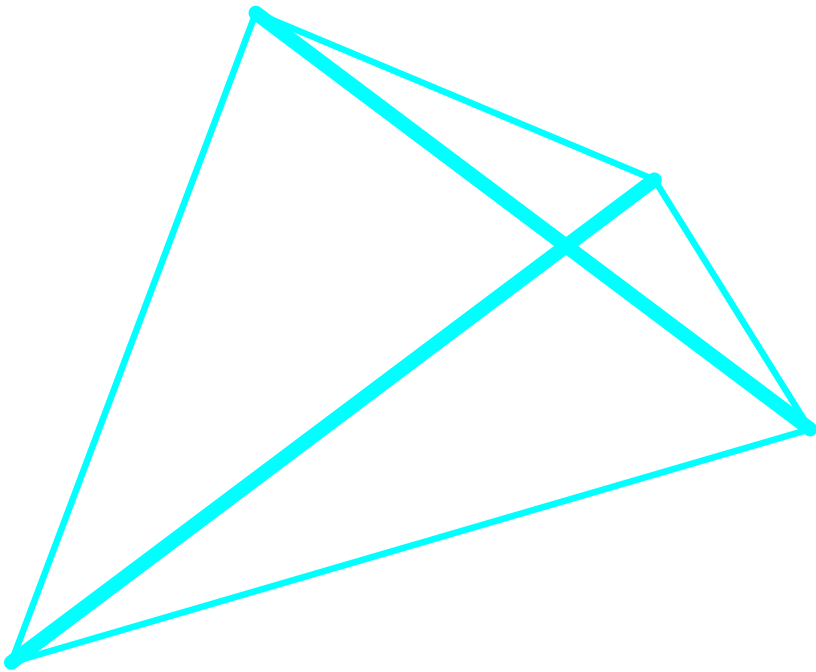
6b



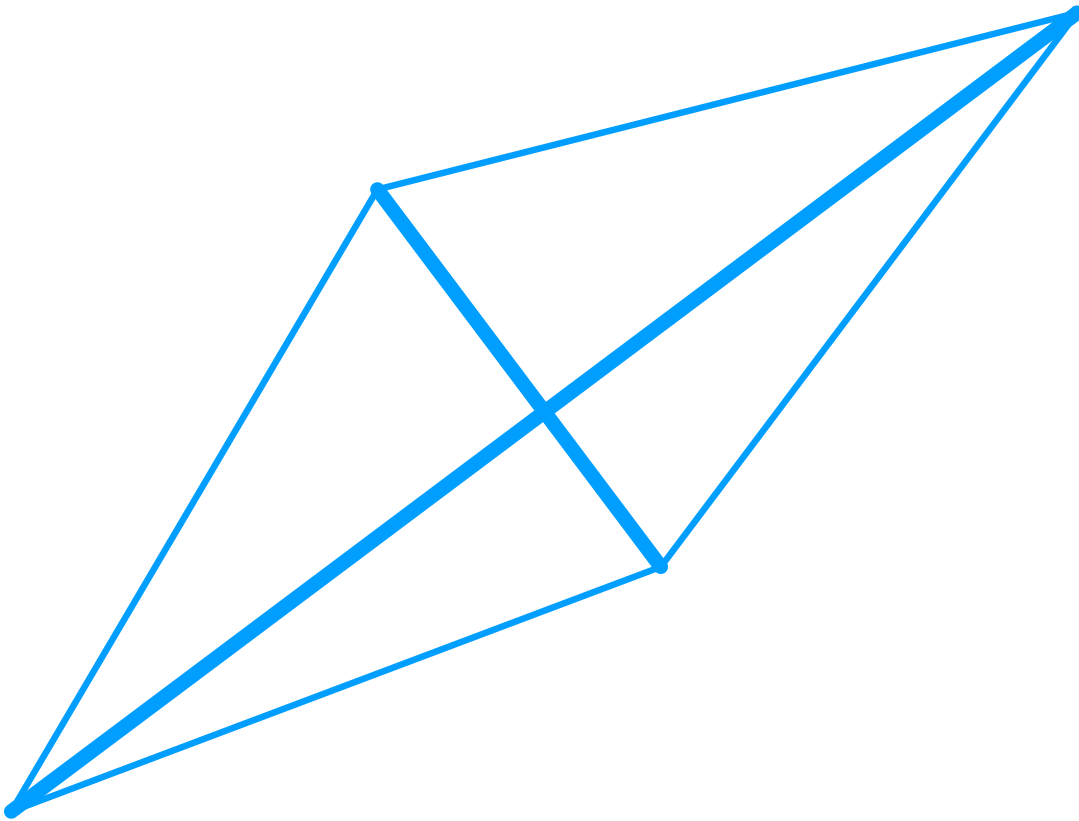
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$\{\{45, 108, 117\}, \{96, 40, 104\}, \{171, 140, 221\}\}$

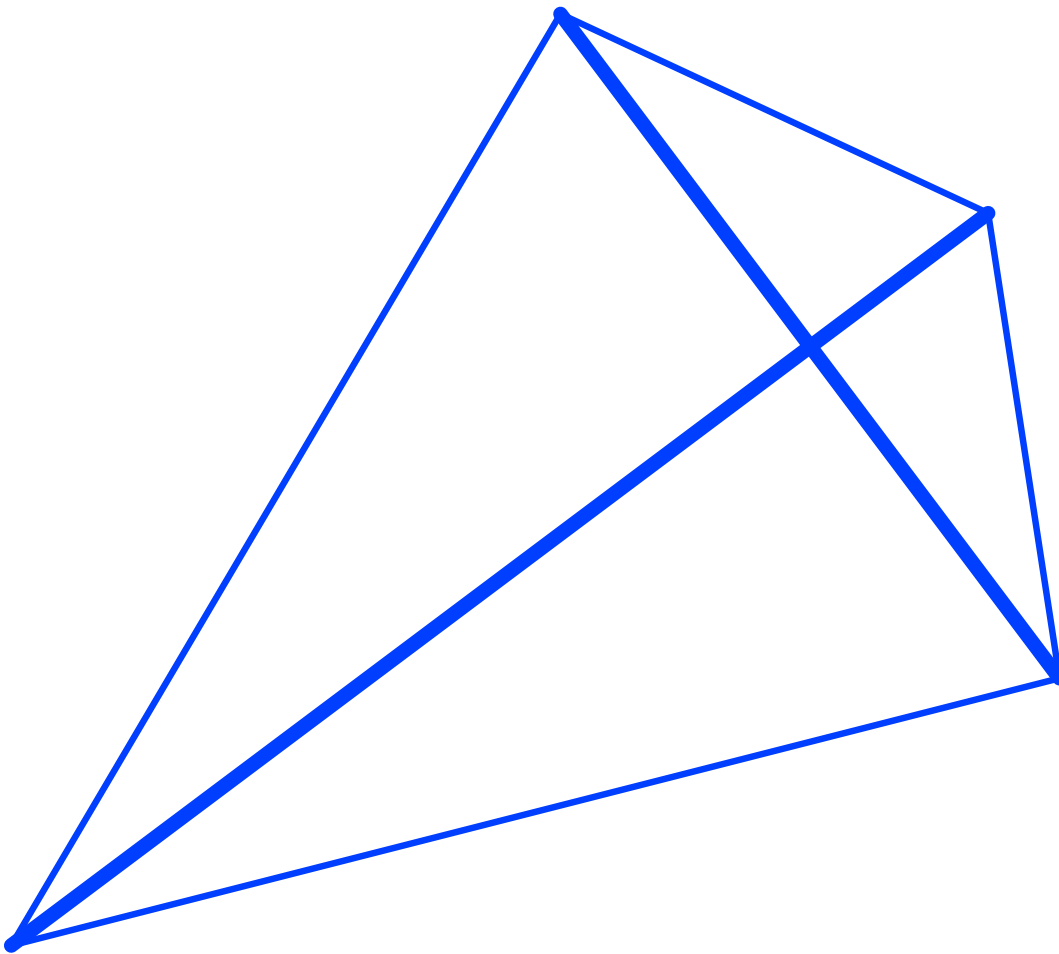


$\{\{44, 117, 125\}, \{116, 87, 145\}, \{144, 42, 150\}\}$

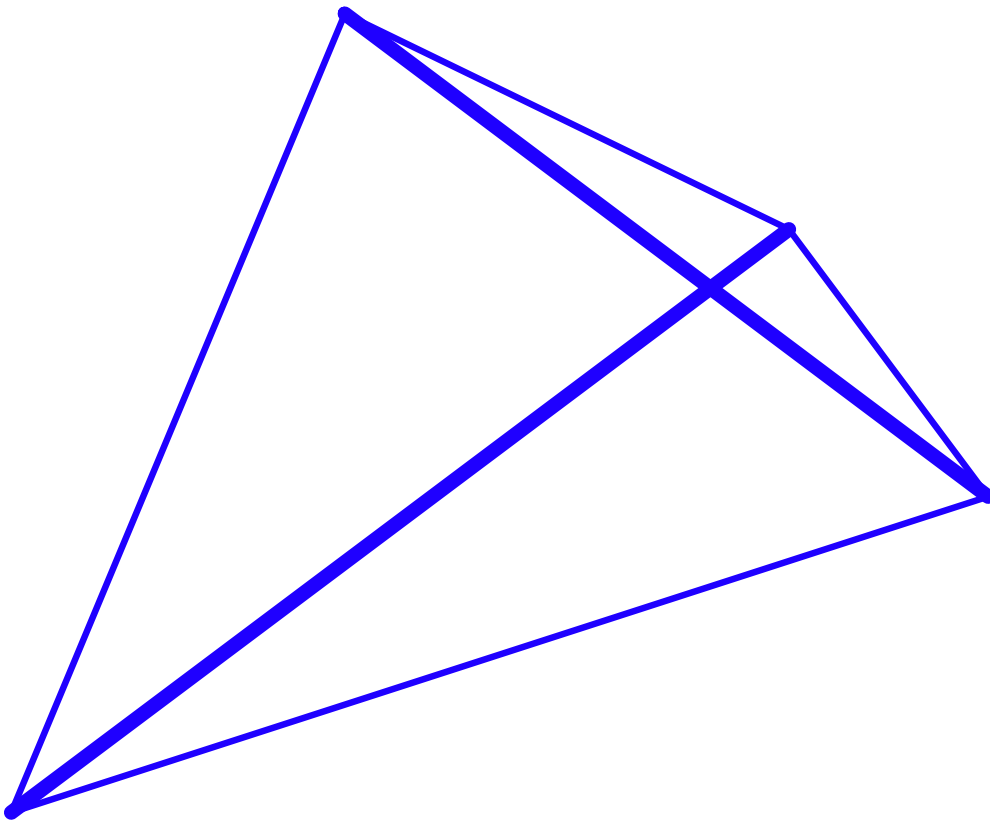


$\{\{66, 112, 130\}, \{117, 44, 125\}, \{192, 144, 240\}\}$

10b

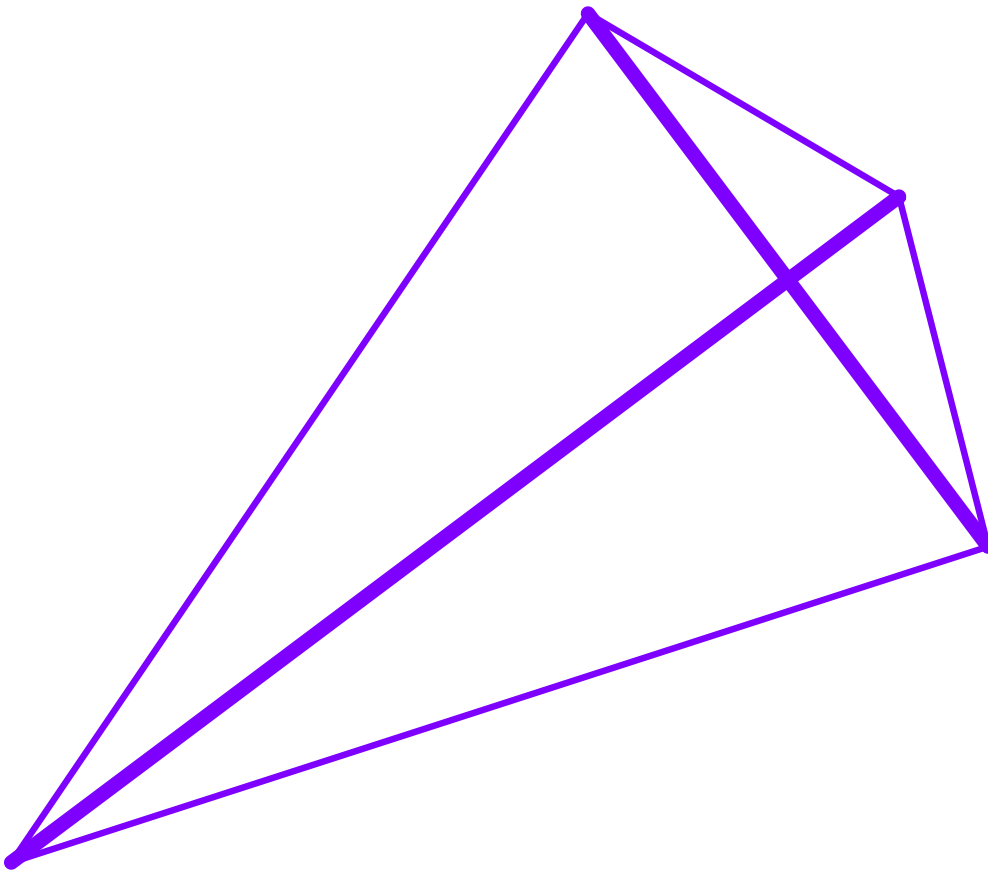


$\{\{99, 168, 195\}, \{176, 132, 220\}, \{189, 48, 195\}\}$

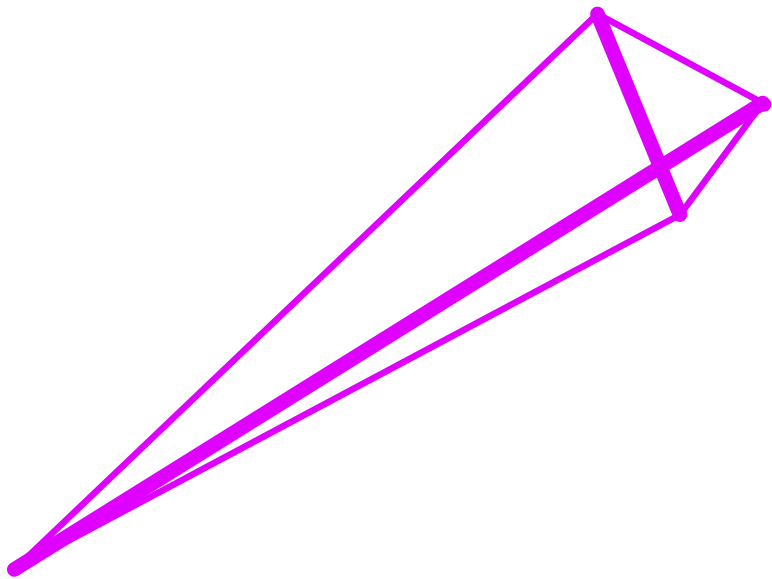


$\{\{60, 144, 156\}, \{140, 105, 175\}, \{176, 57, 185\}\}$

12b

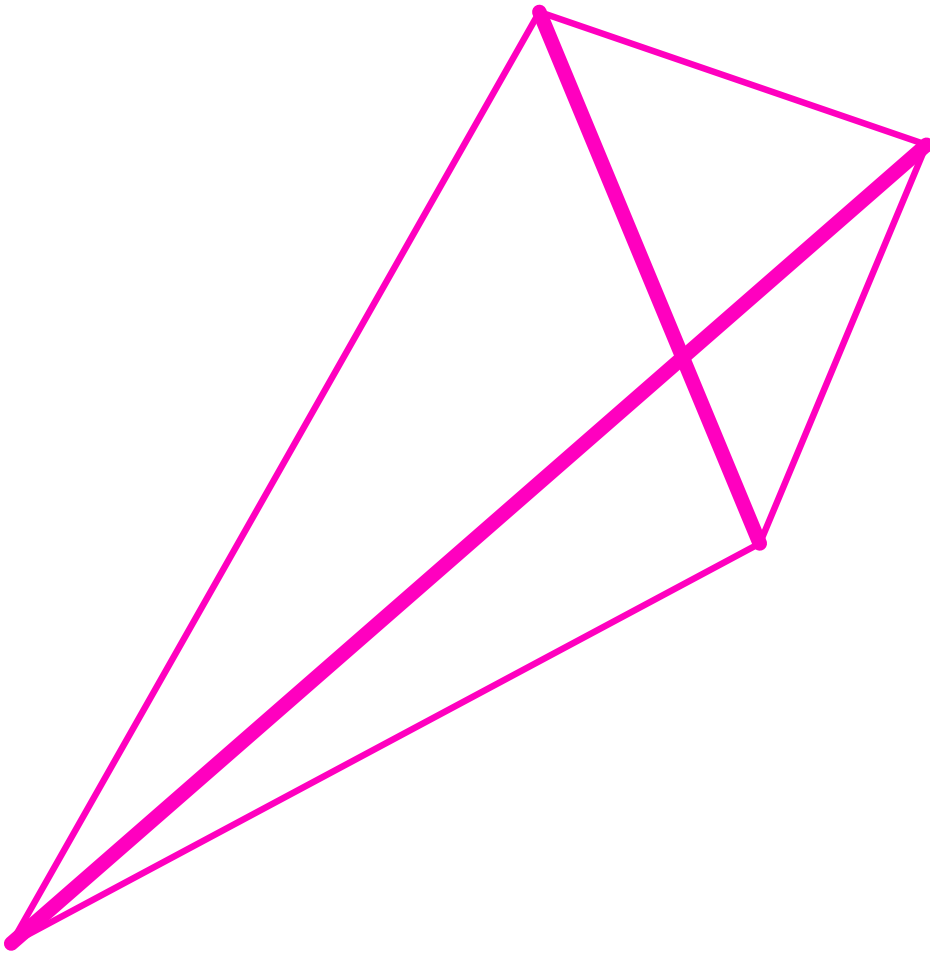


$\{\{104, 153, 185\}, \{160, 120, 200\}, \{176, 57, 185\}\}$

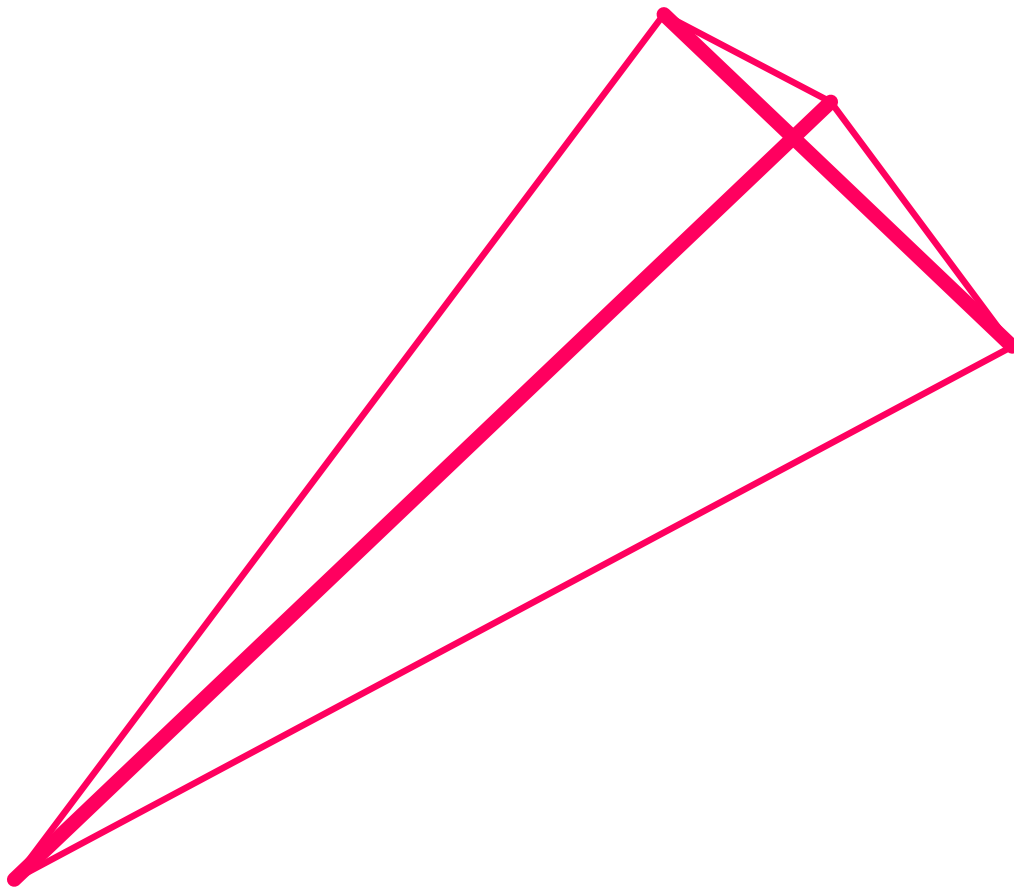


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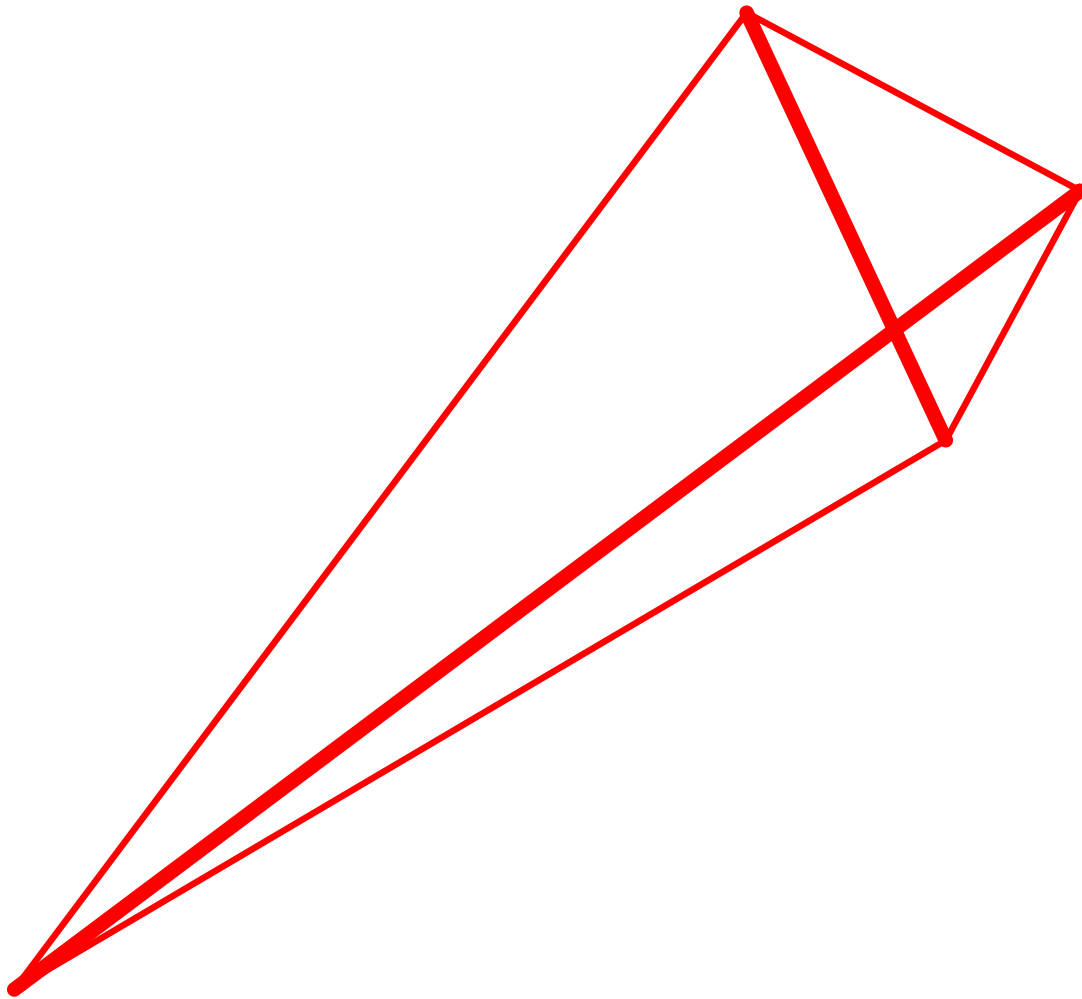
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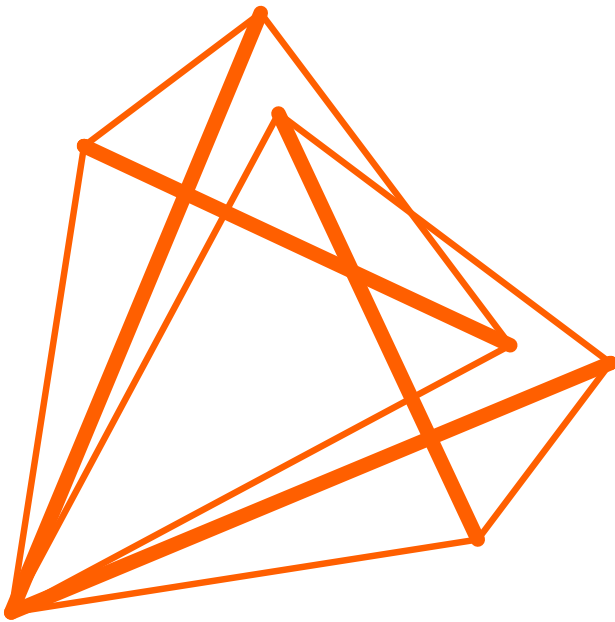
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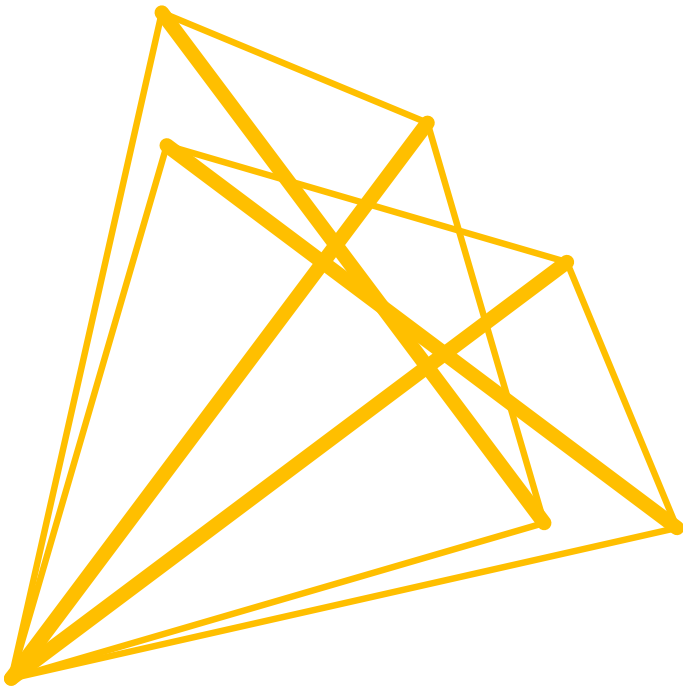
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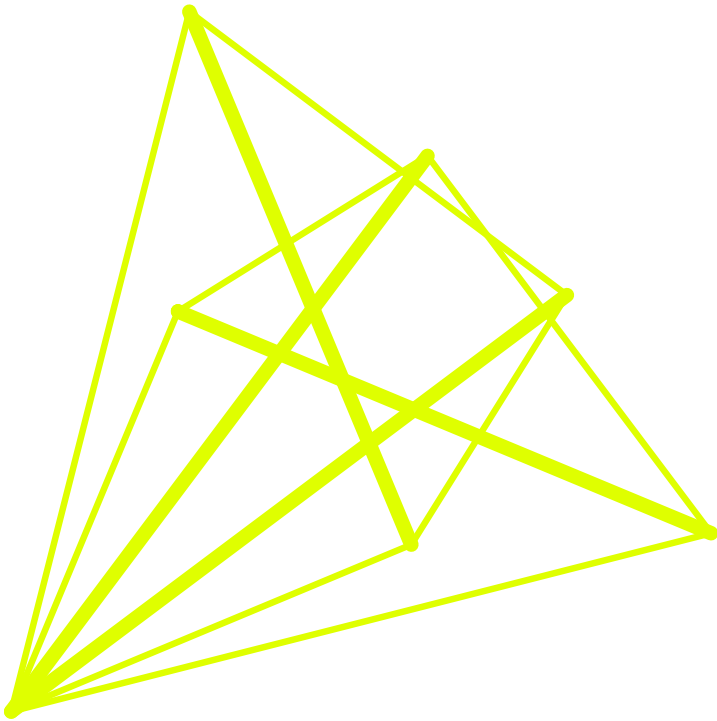
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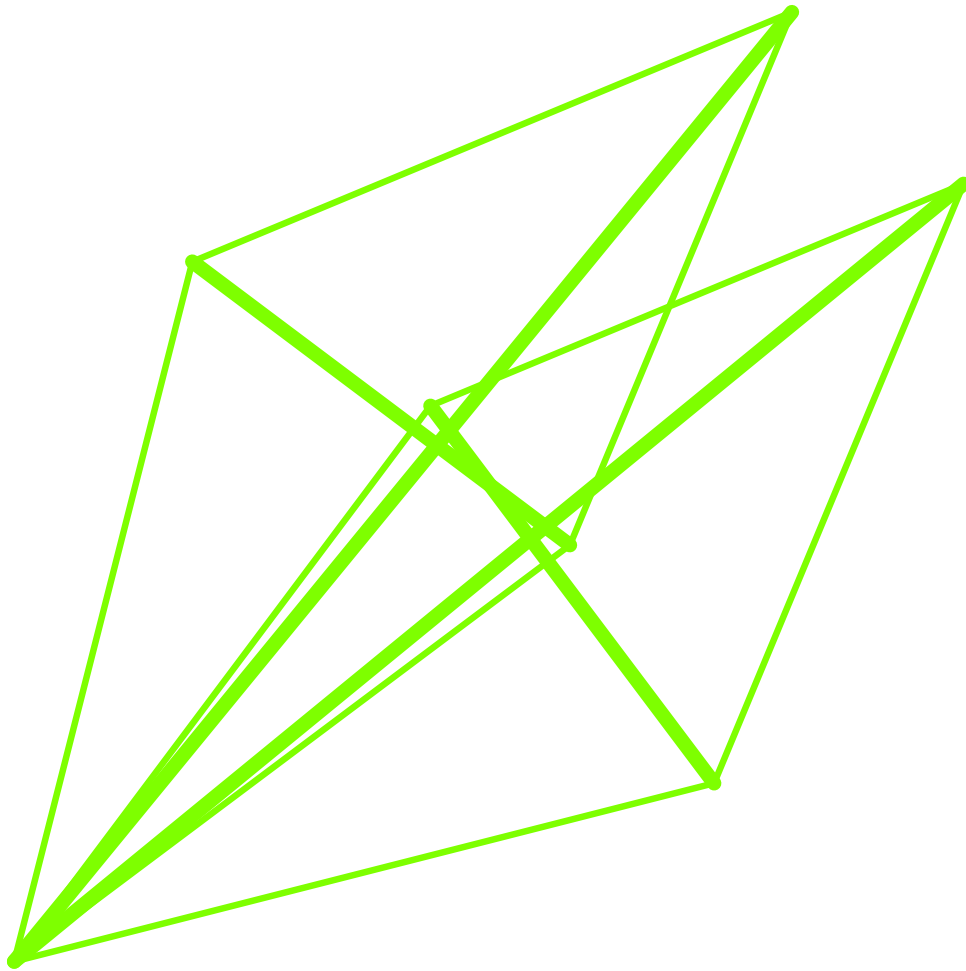
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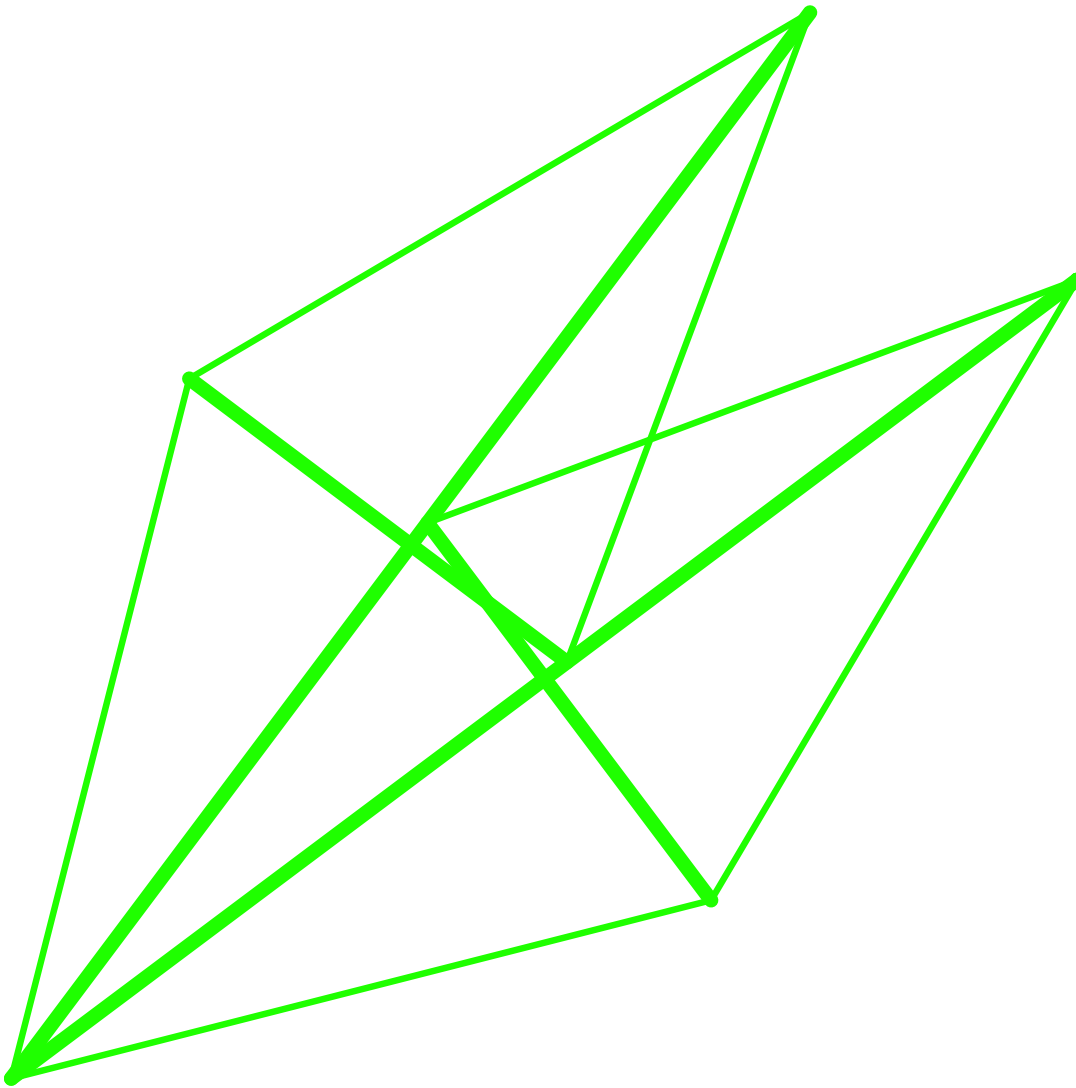
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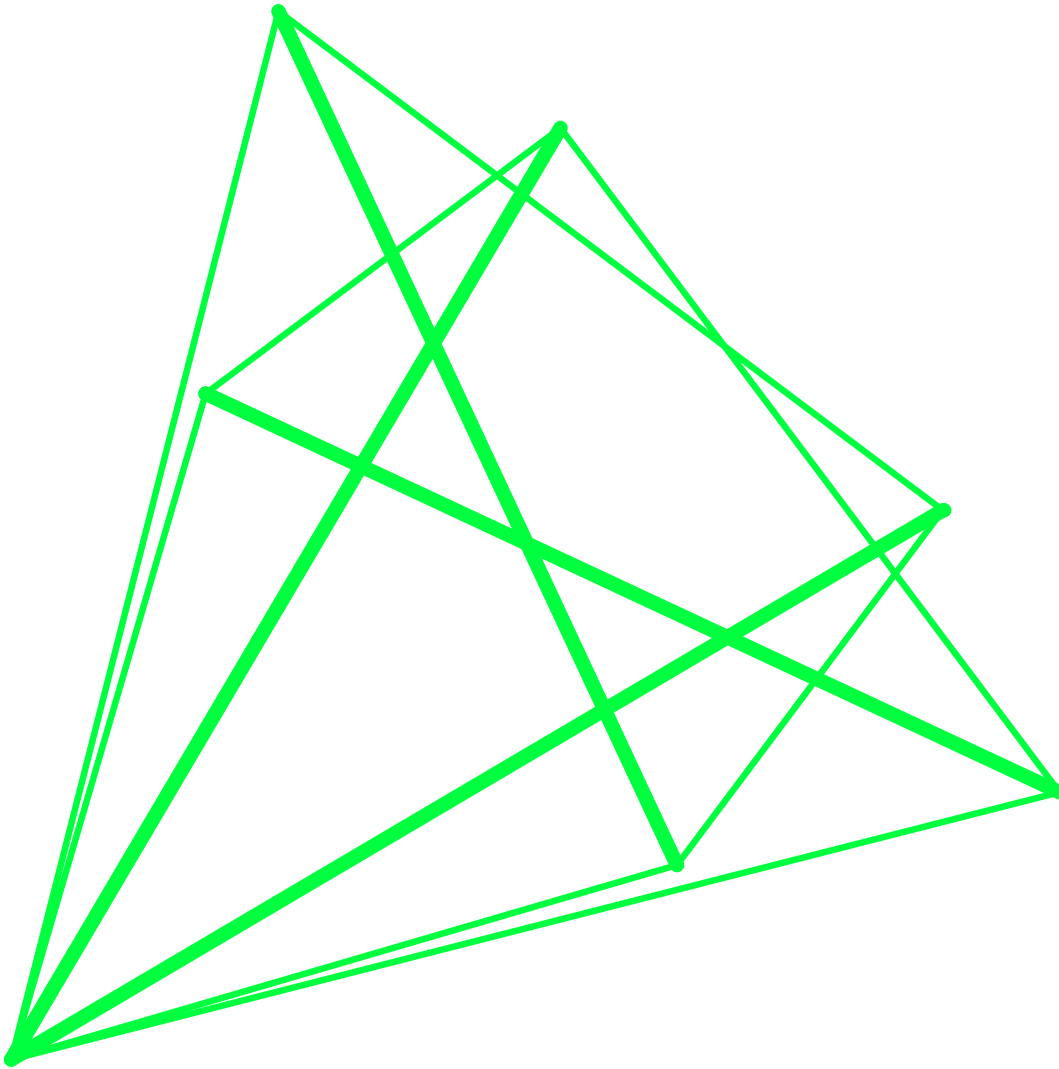
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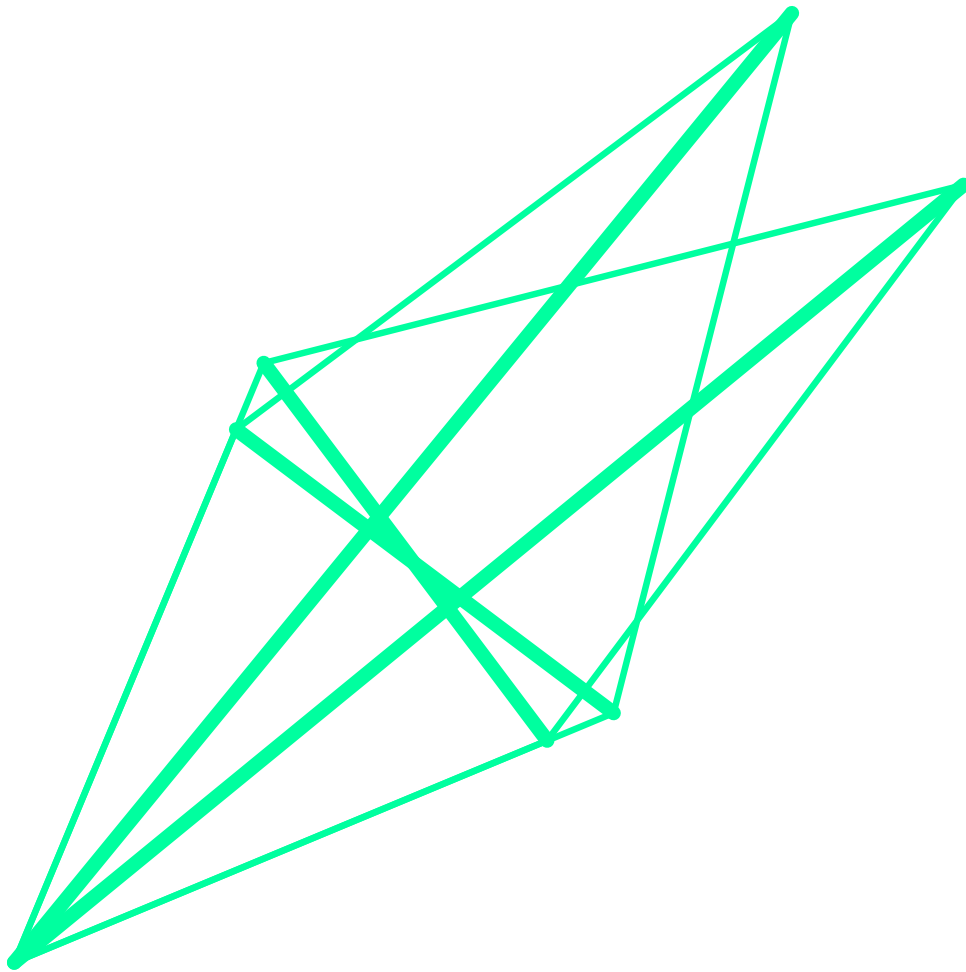
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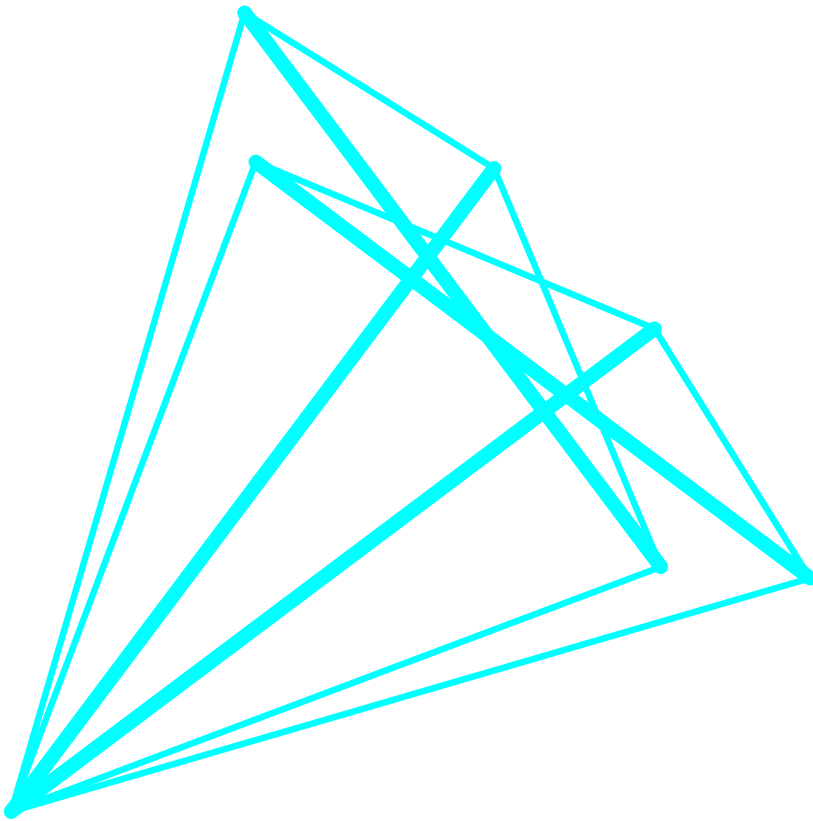
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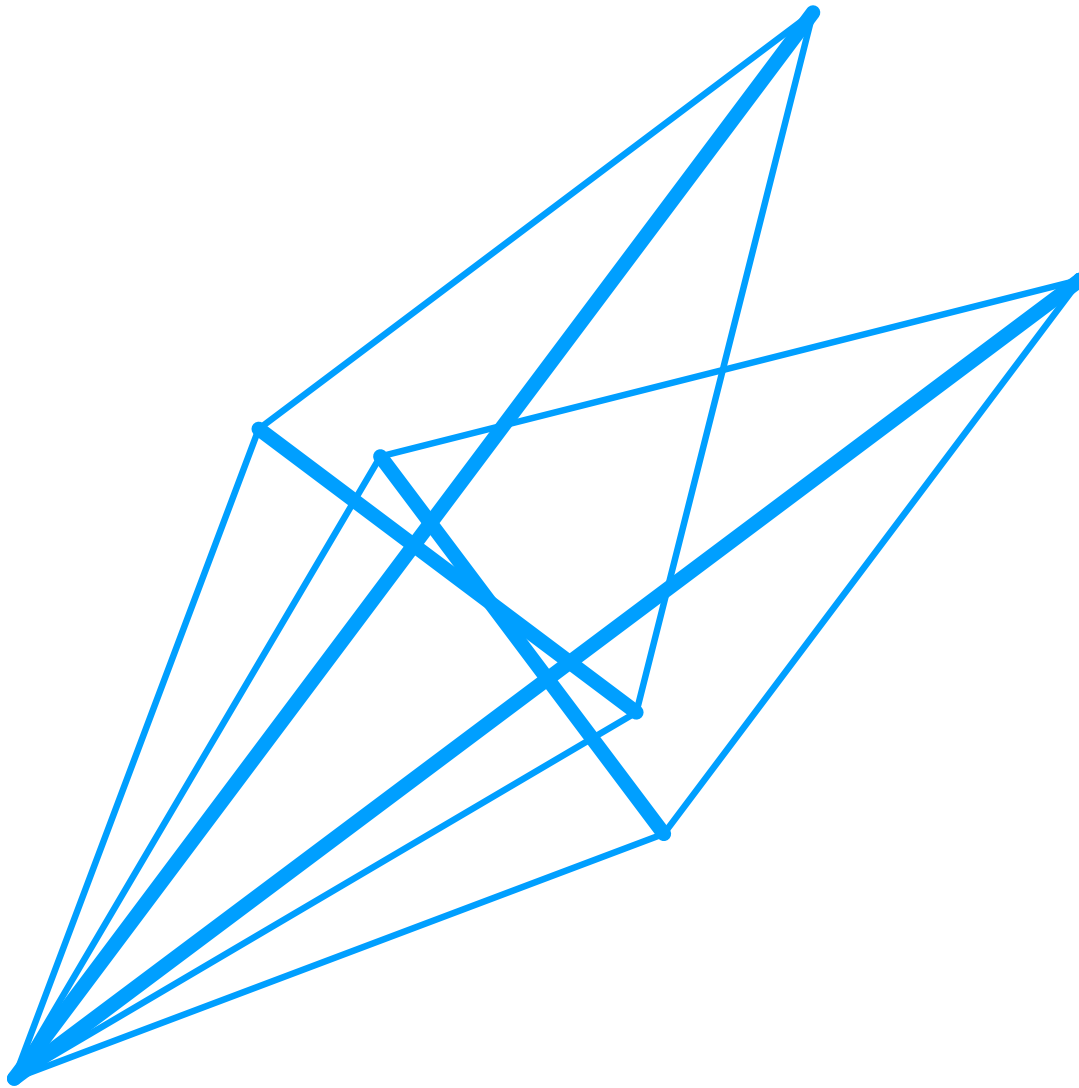
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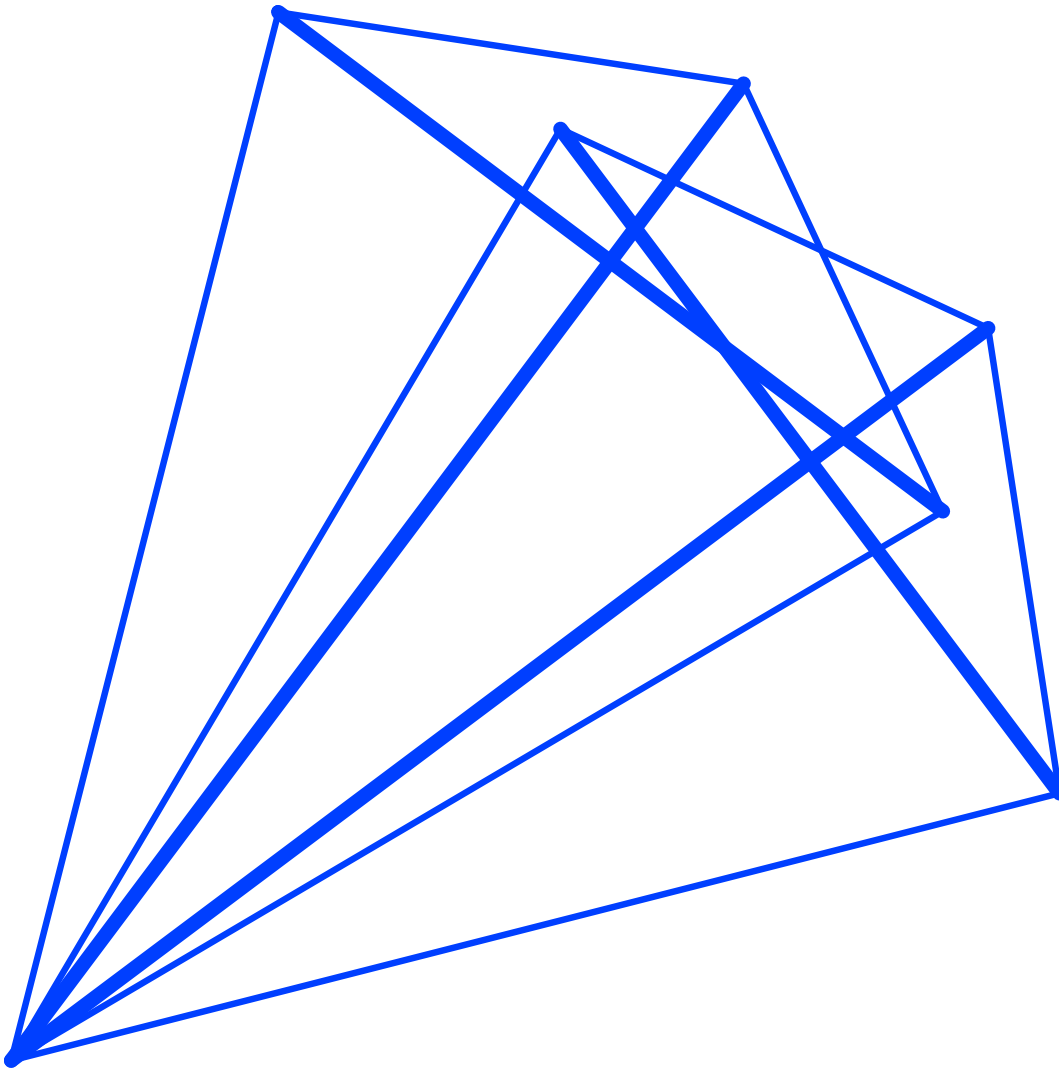
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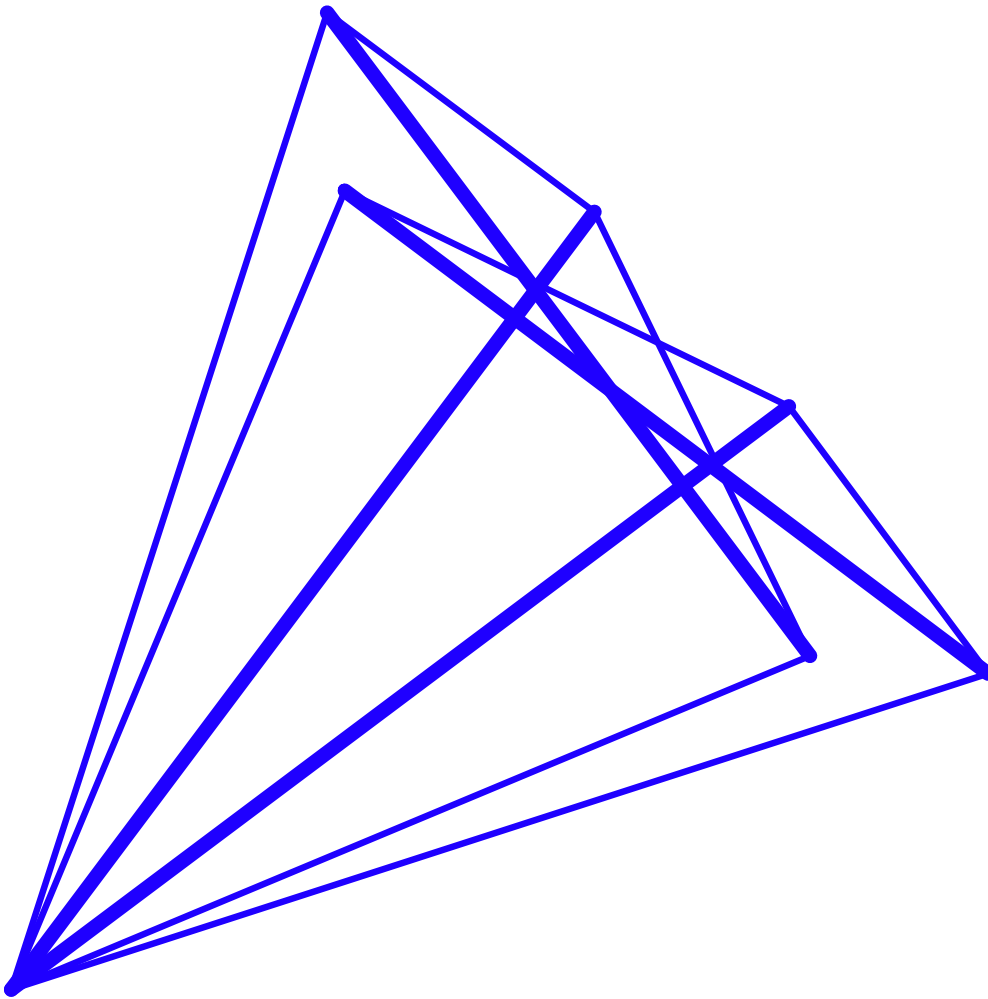
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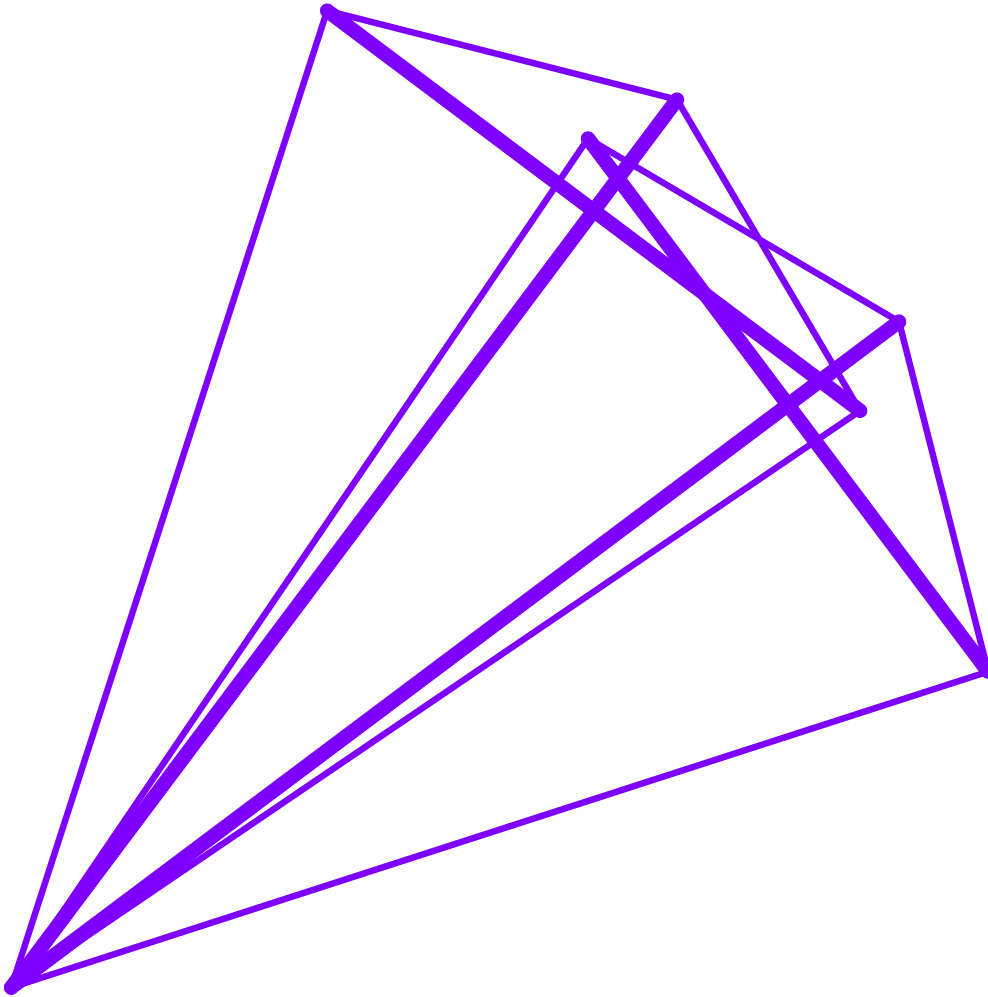
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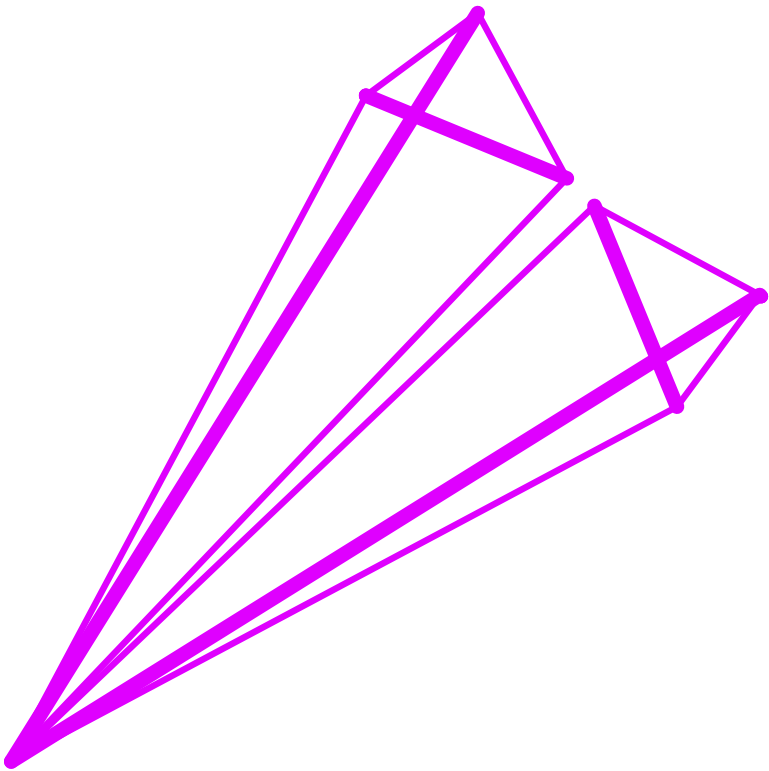
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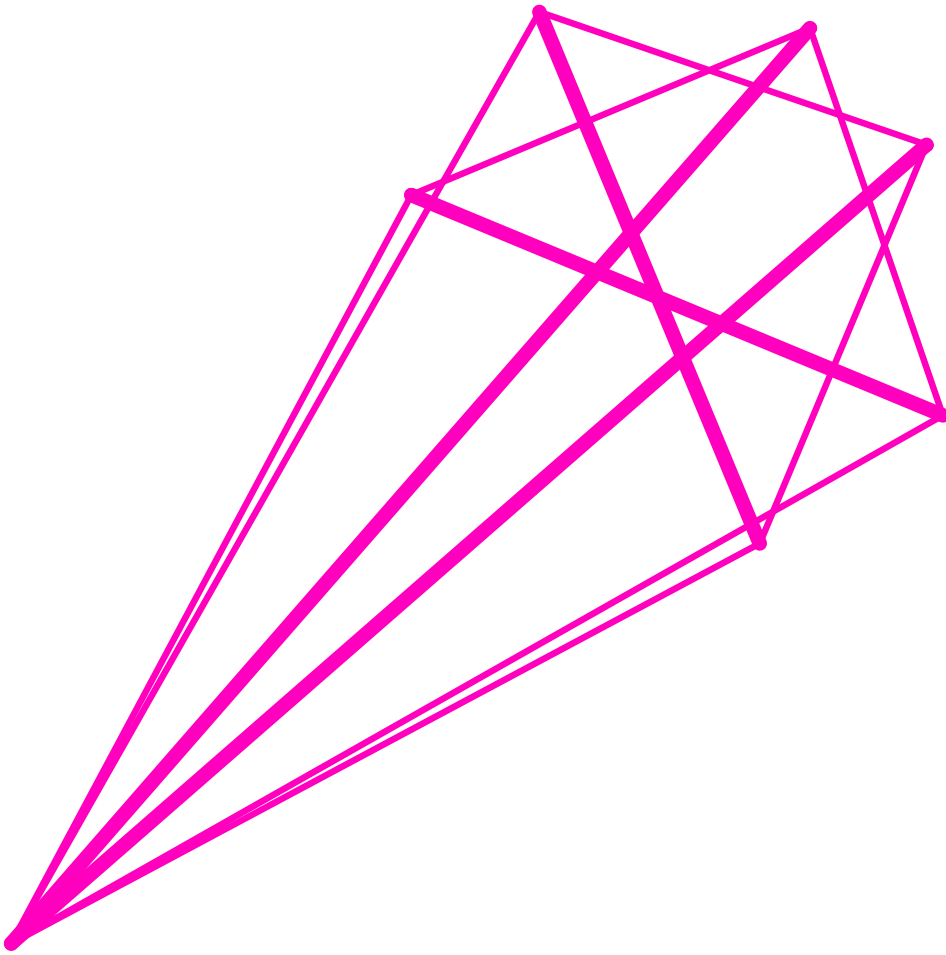
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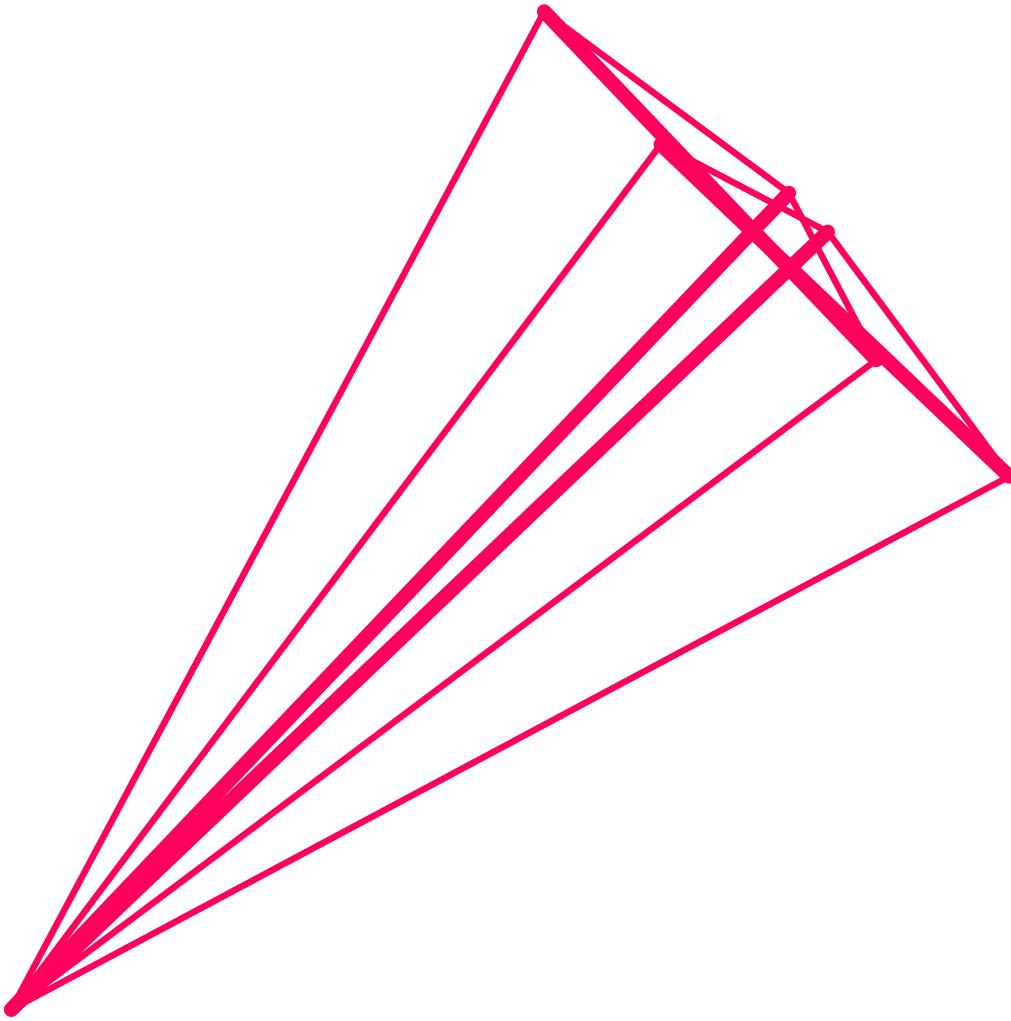
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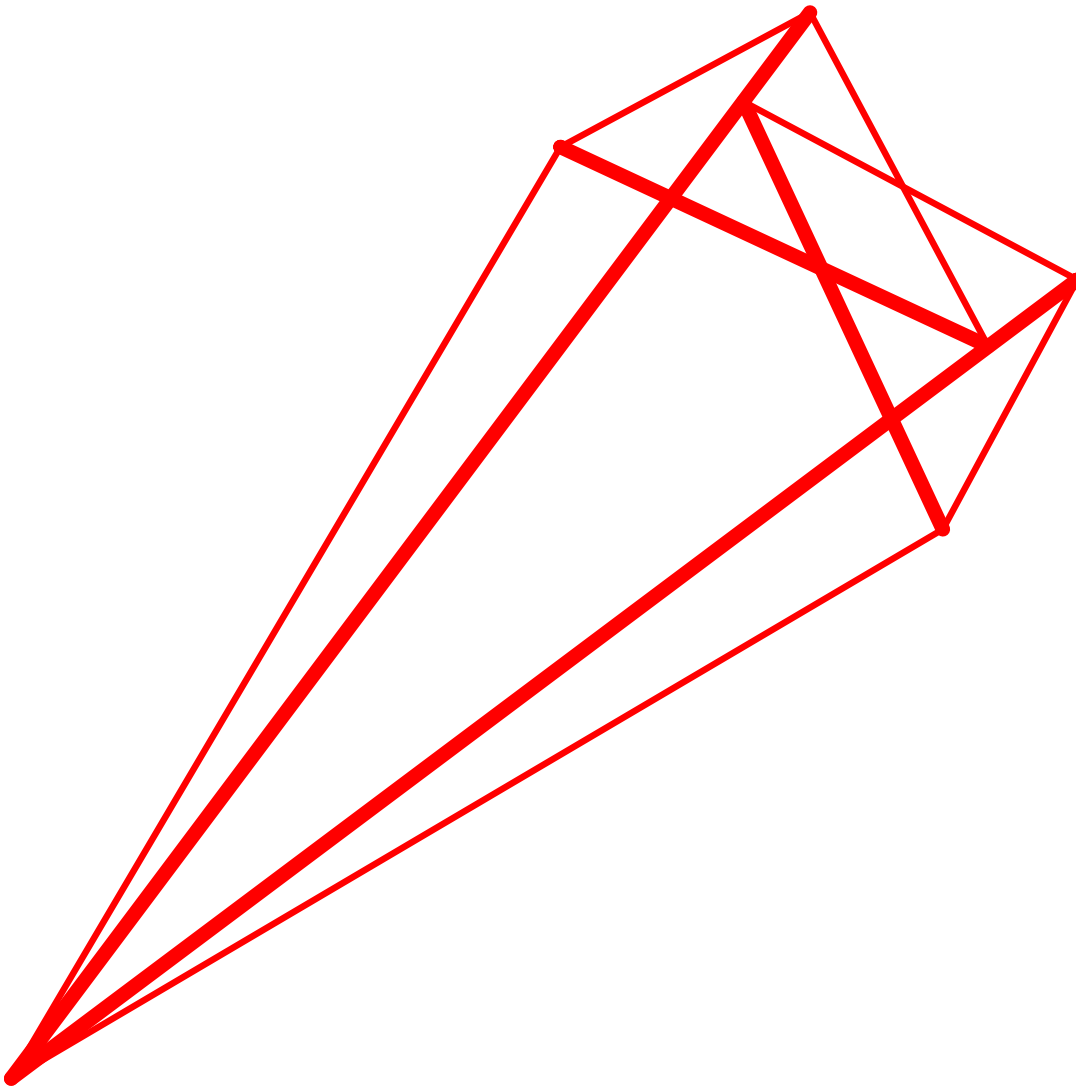
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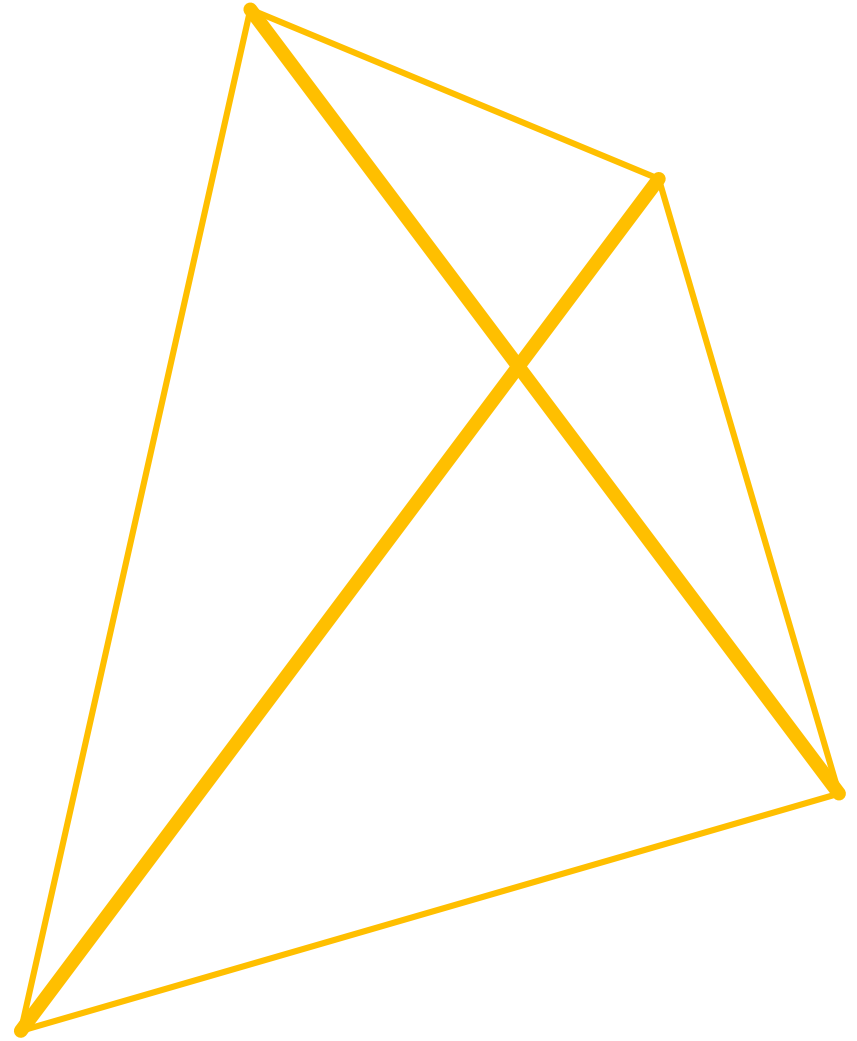
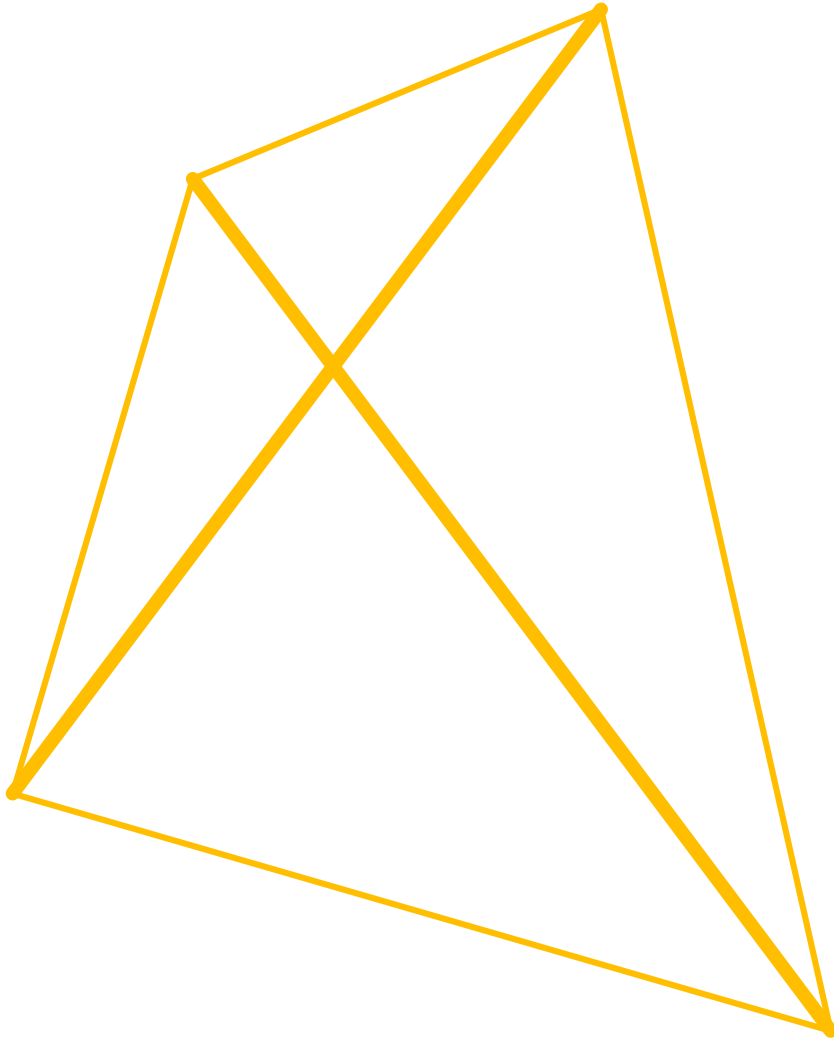


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 $\{\{132, 176, 220\}, \{168, 99, 195\}, \{192, 144, 240\}\}$

2a - $\{\{27,120,123\},\{75,100,125\},\{96,28,100\}\}$



2b - $\{\{28, 96, 100\}, \{100, 75, 125\}, \{120, 27, 123\}\}$

