

On paradigms and model choices

are we missing a trick?

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Different paradigms

- ...a paradigm that differs from the traditional one of statistical modelling where the case for choosing a particular model to summarise data is based on how well it fits the data being analysed.
- the case for applying the Rasch model is that if the data fit the model, then, within a frame of reference, they provide invariance of comparisons of persons with respect to items, and vice versa.

Key considerations

- ...within a frame of reference
- the theory behind the construction of the instrument



A reading programme

- Books graded by difficulty
- Question demand matched to reading demand
- Pupils answer questions as they progress
- Questions administered 'When ready'
- Pupils can have another try

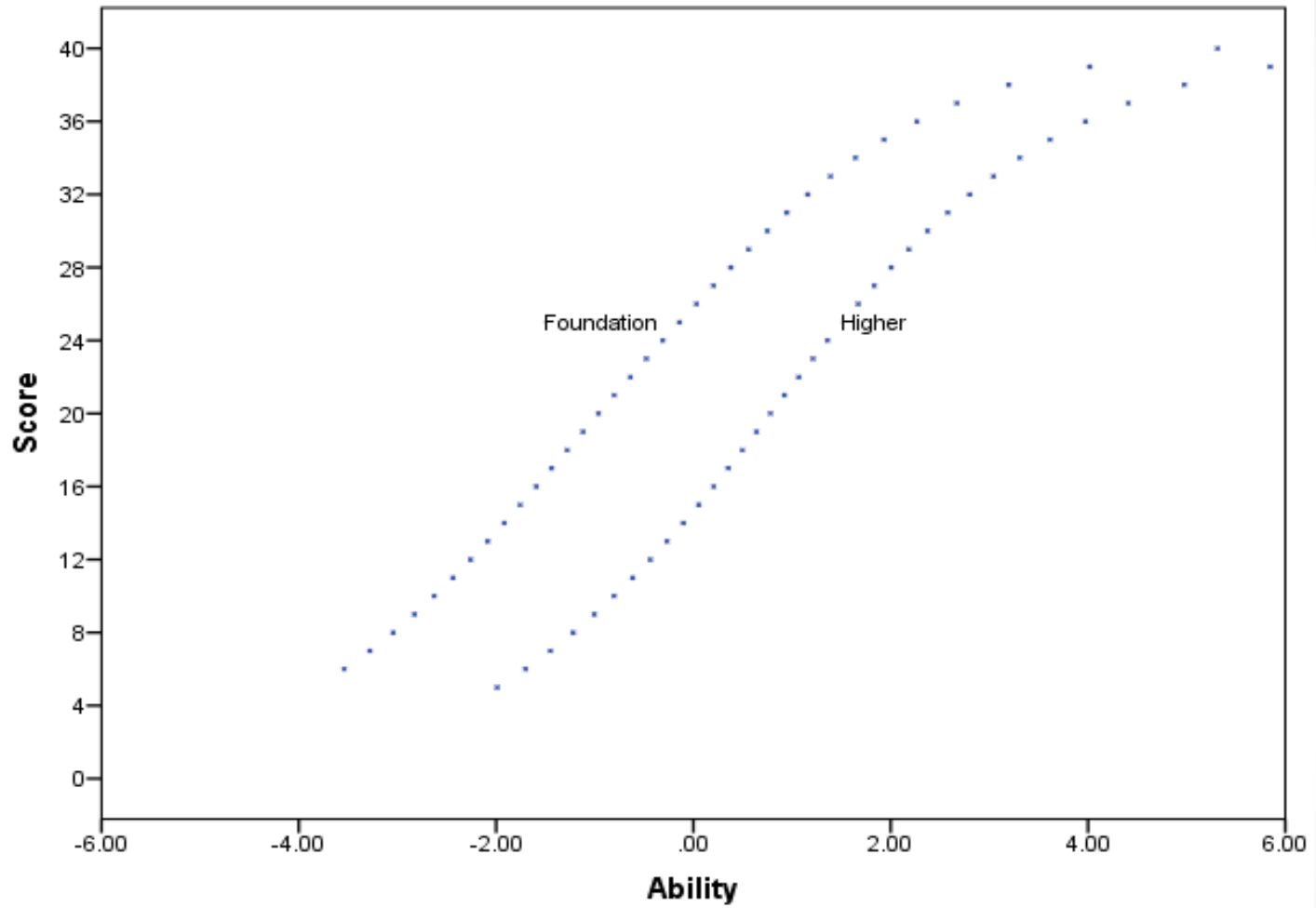
Questions

- How do we define **frame of reference** in this context?
- Can we claim that this constitutes a measurement instrument?

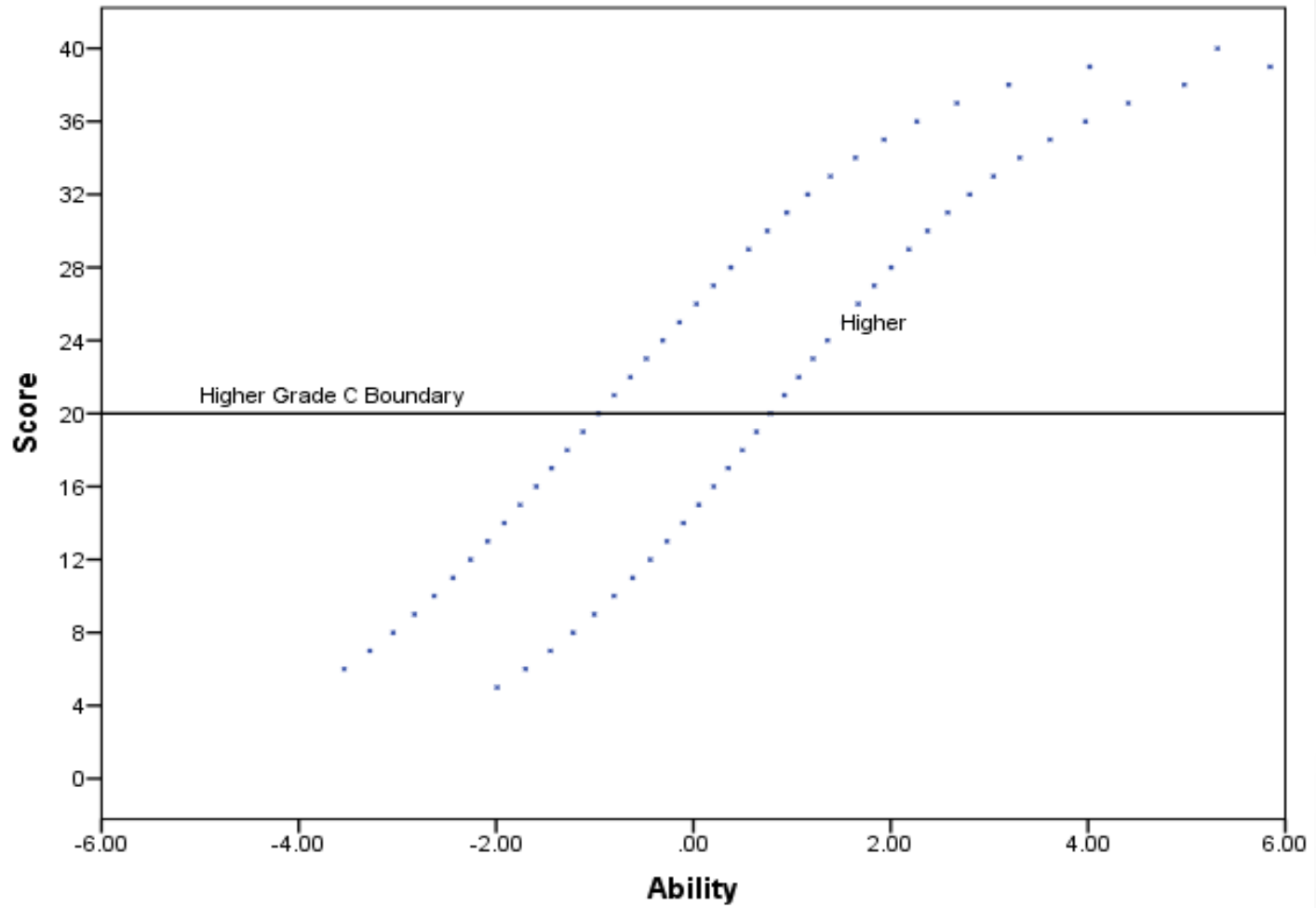
Vertical 'Equating'

- Age independent scales
- Tiering
- What is our frame of reference?

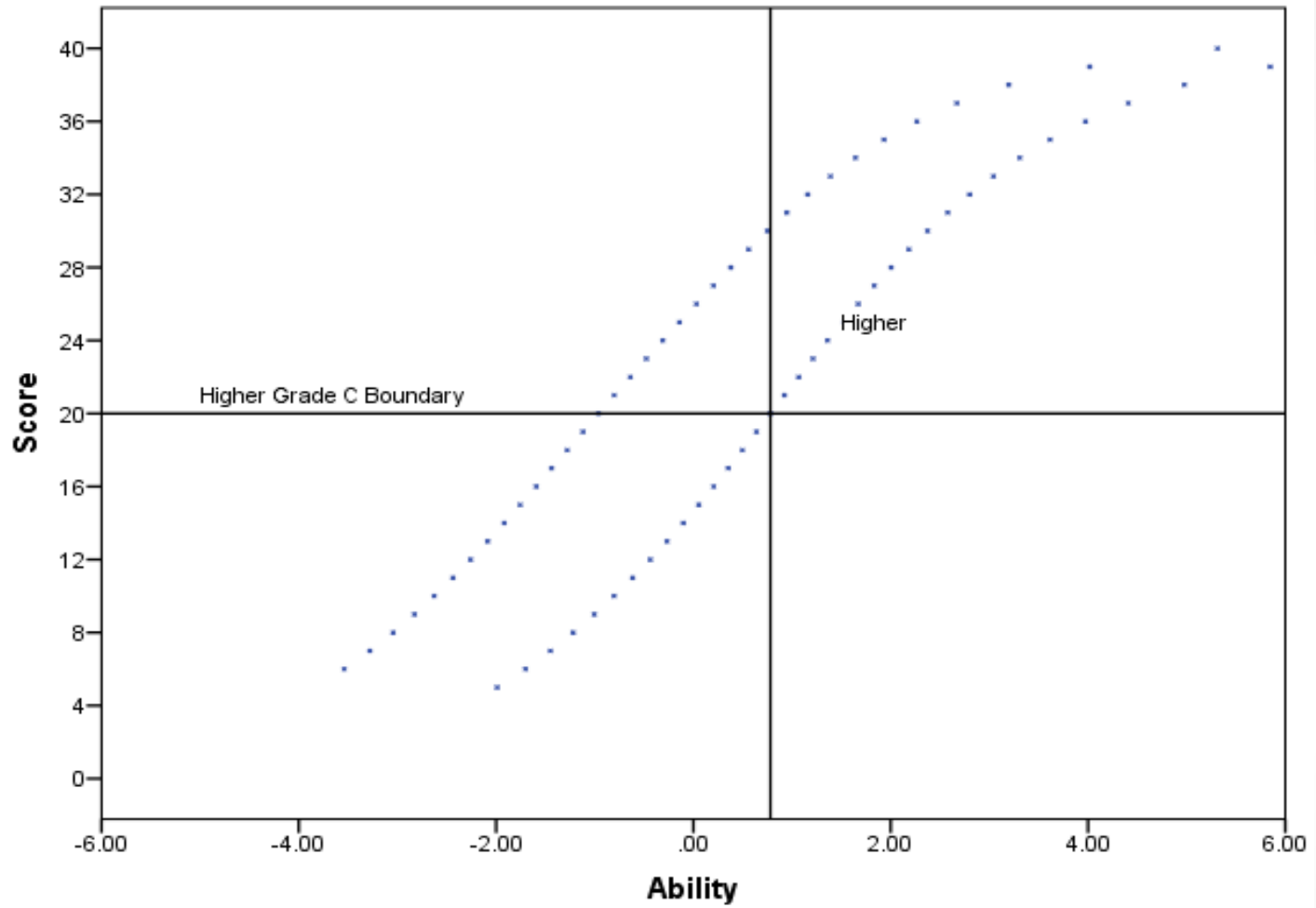
Number of common marks: 12



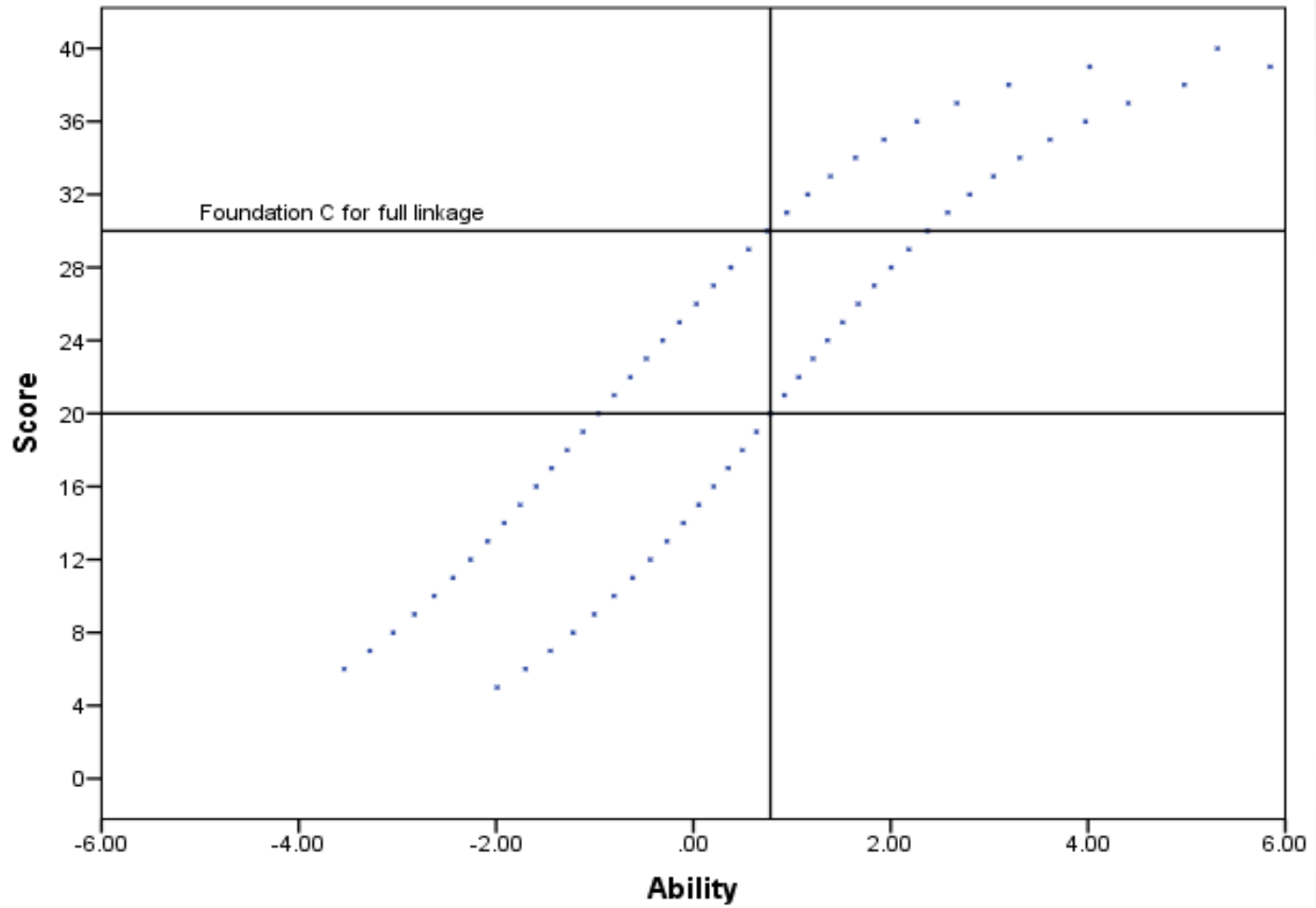
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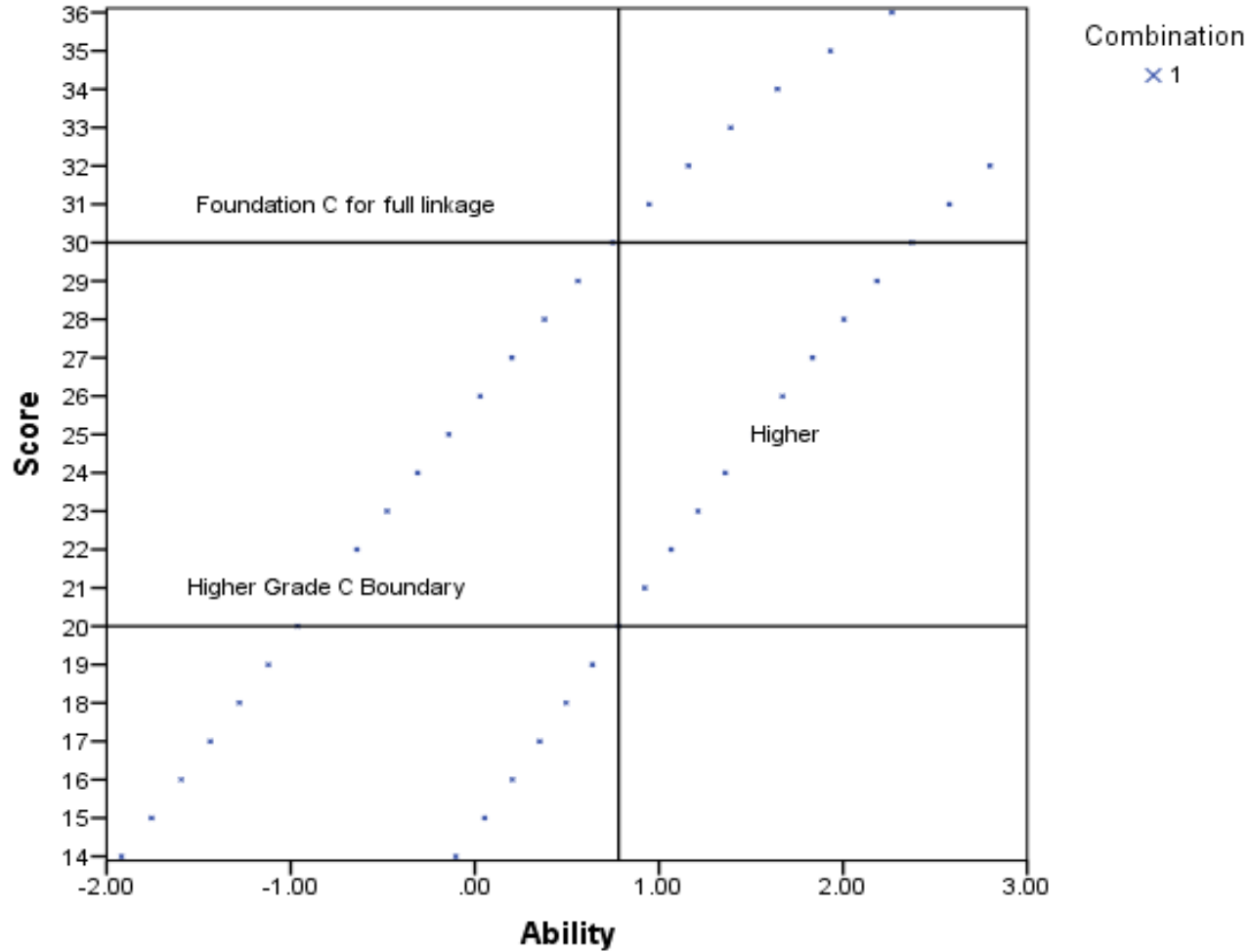
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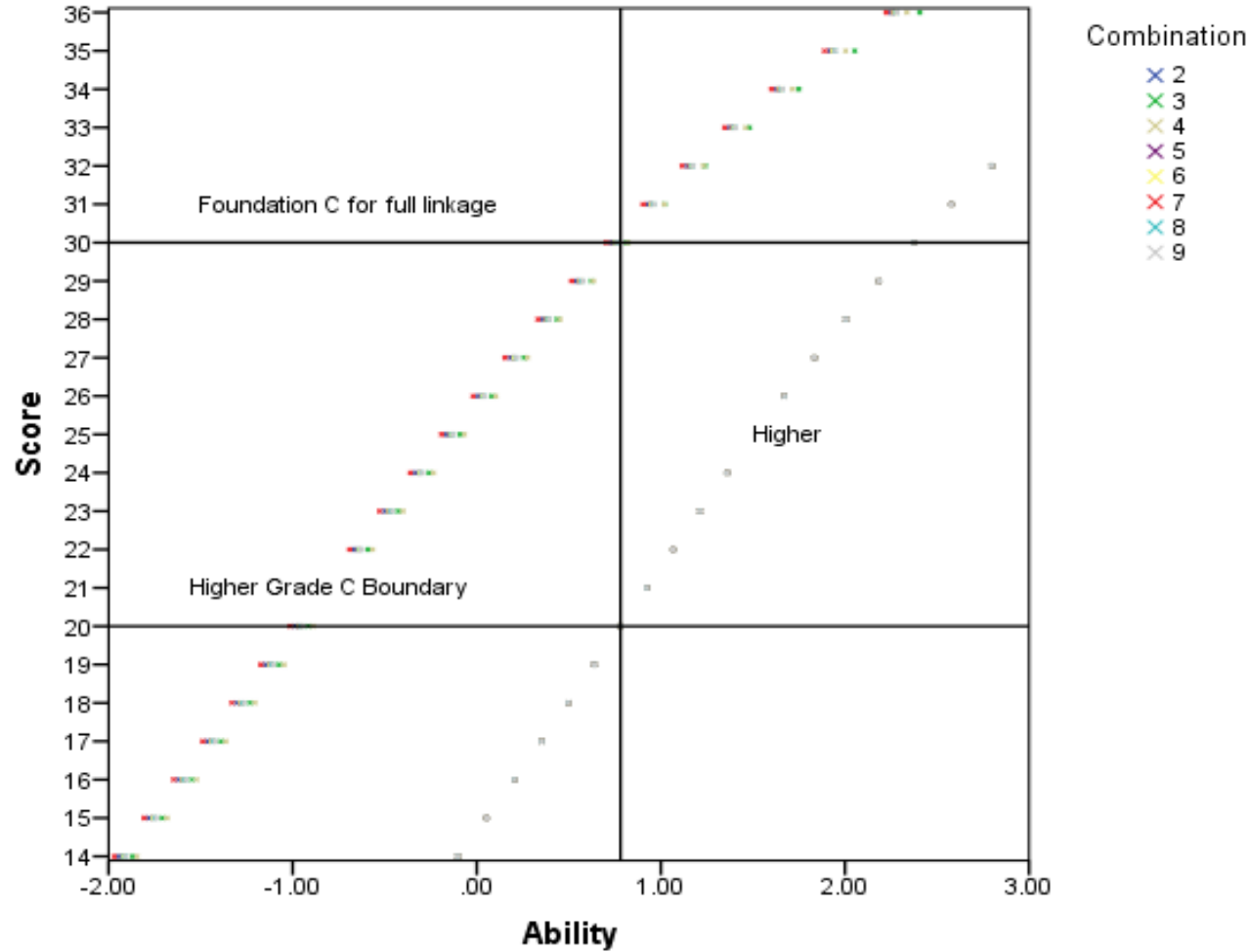
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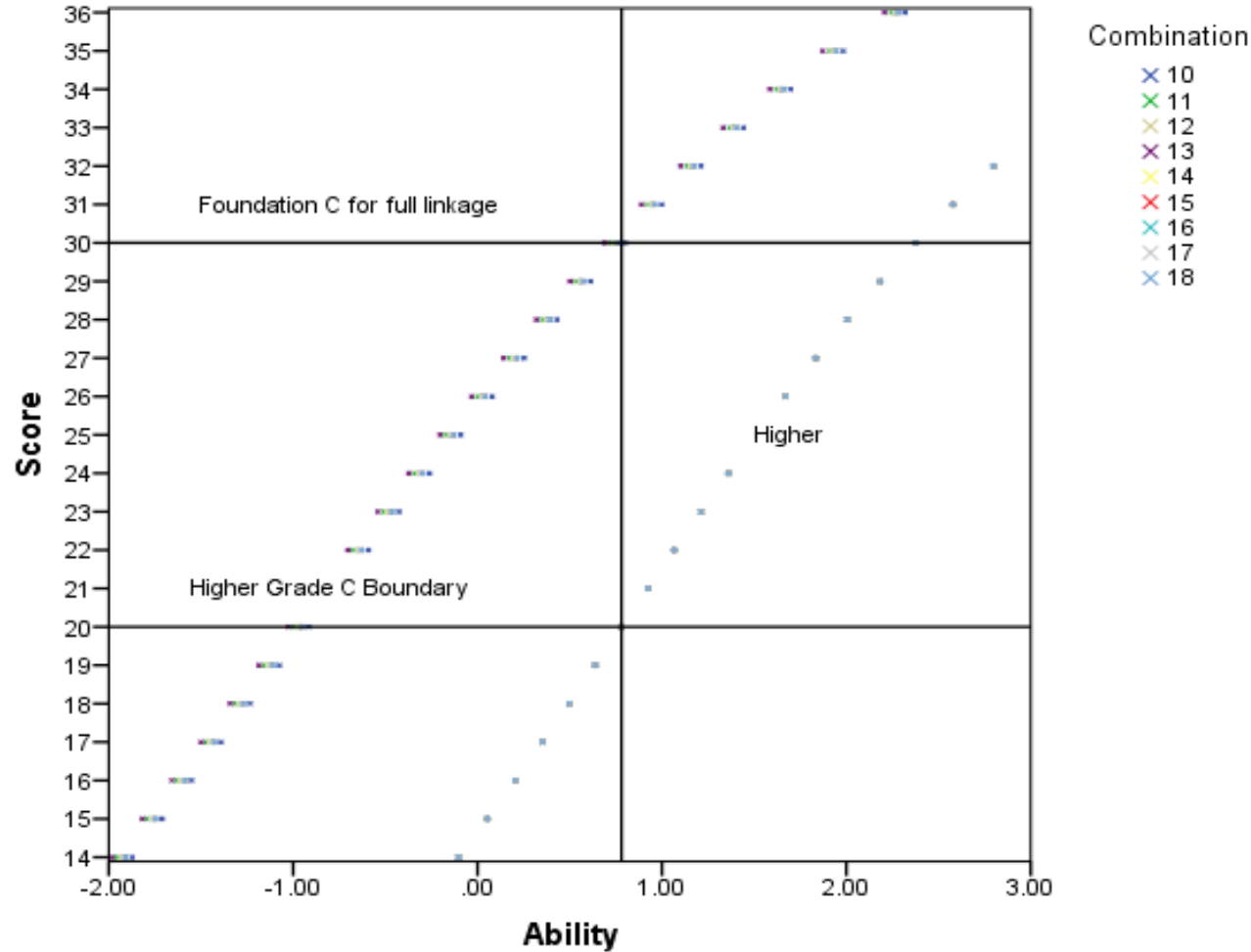
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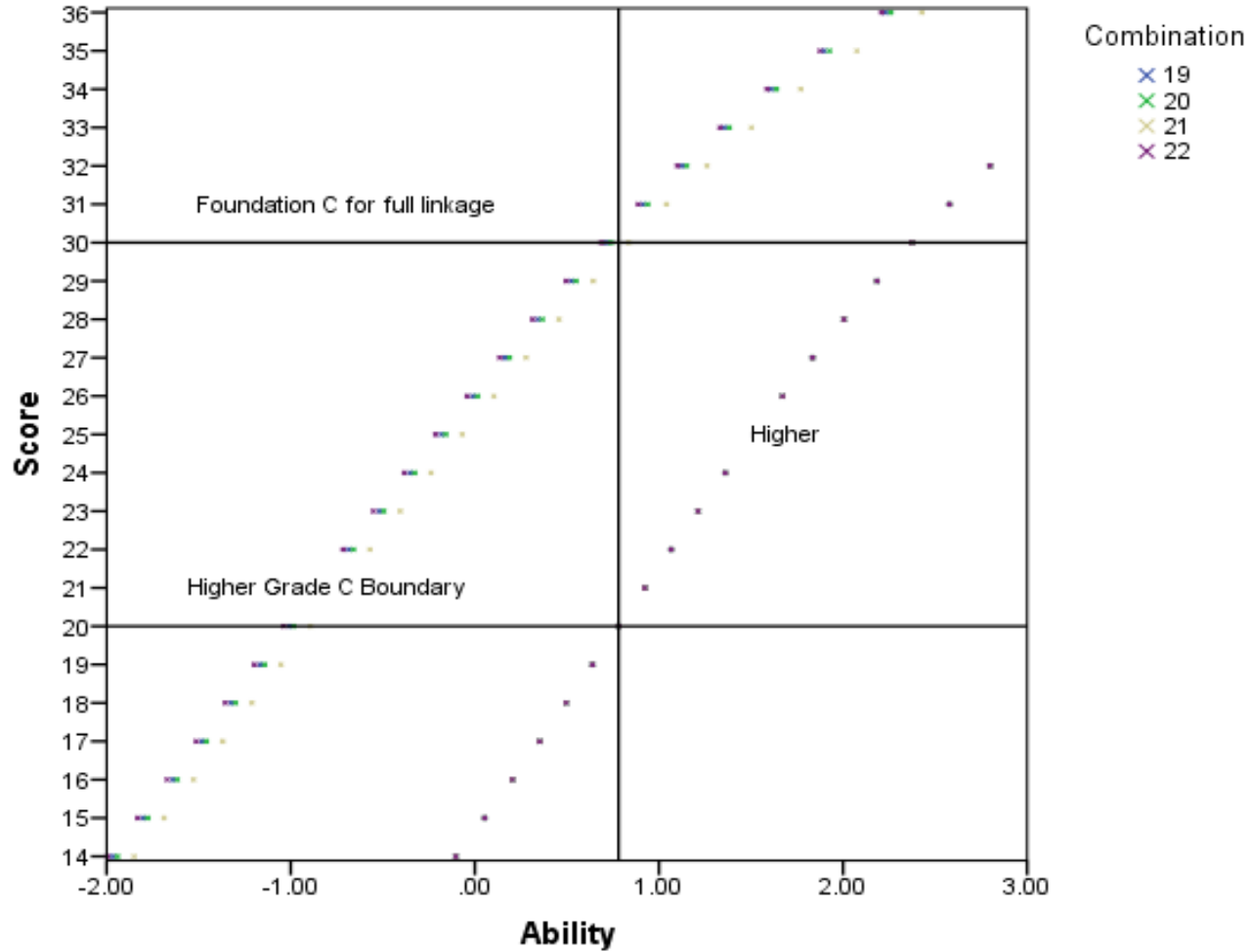
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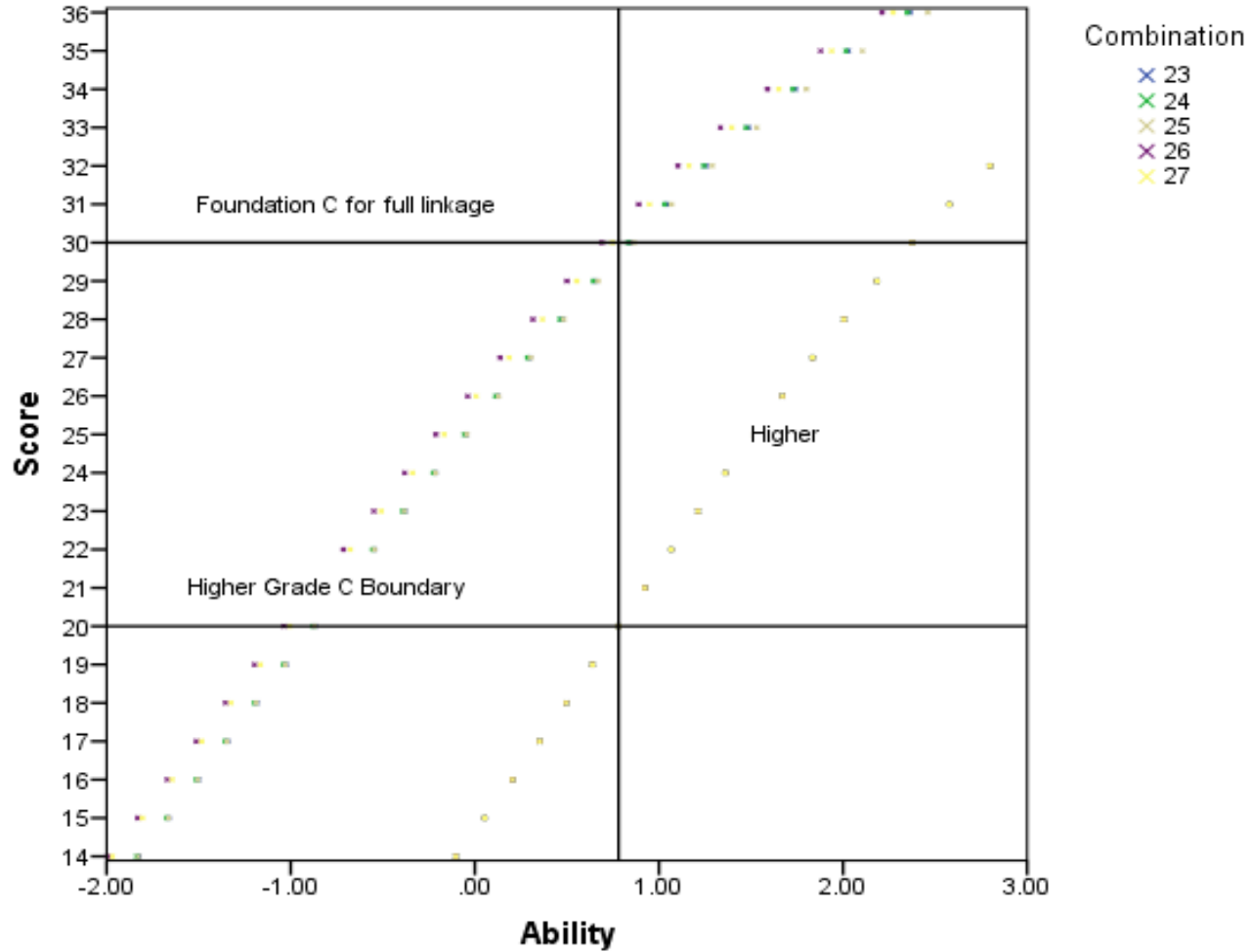
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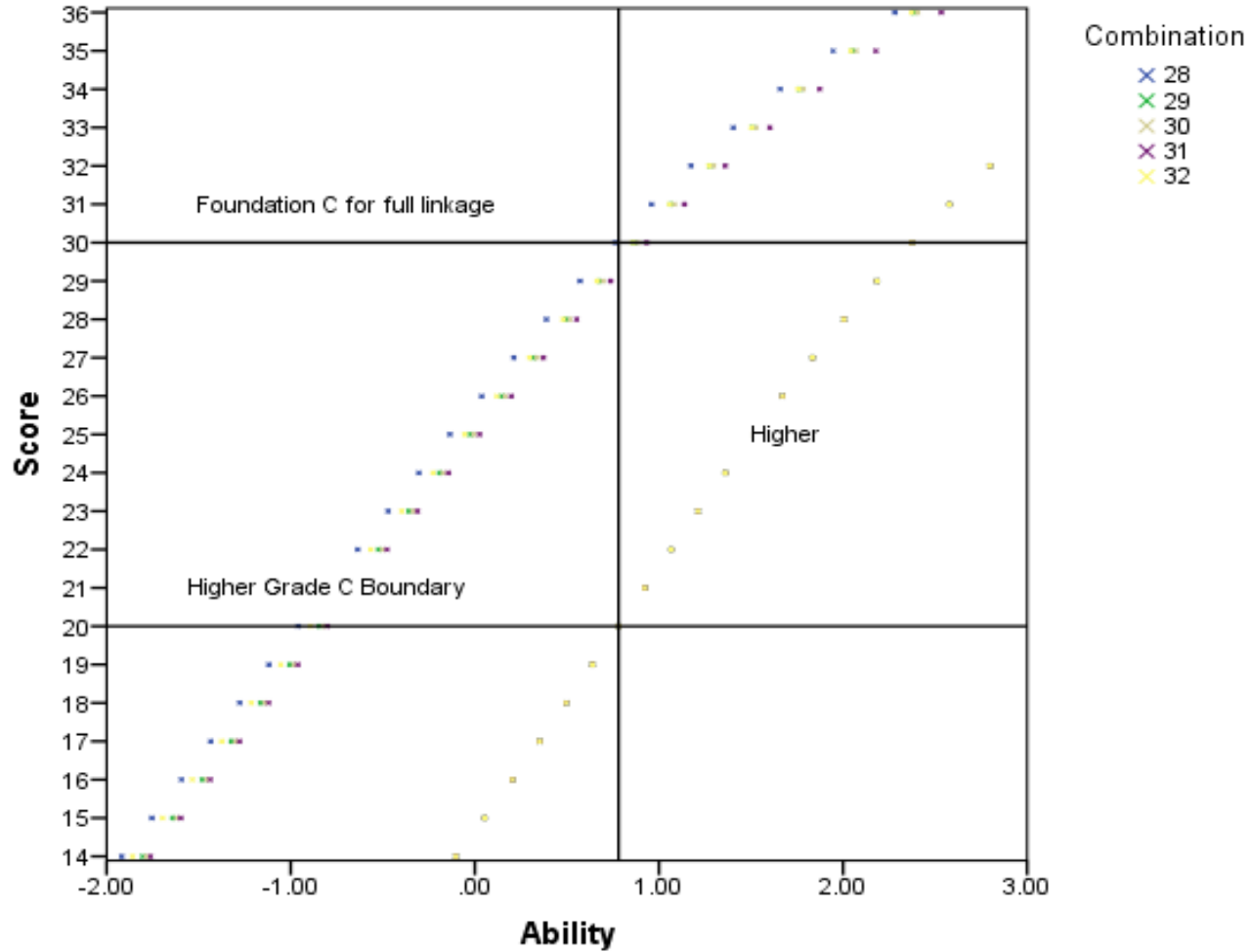
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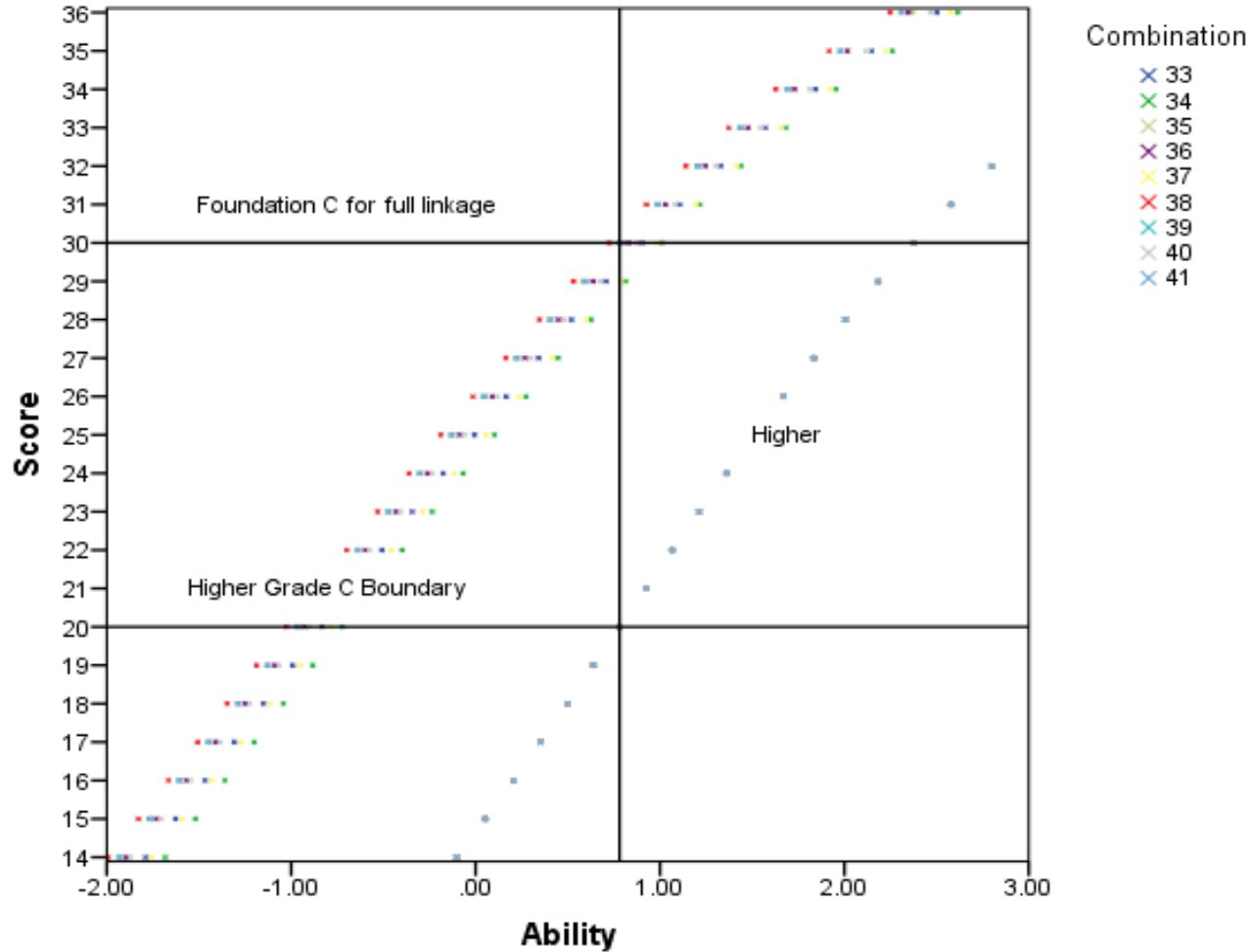
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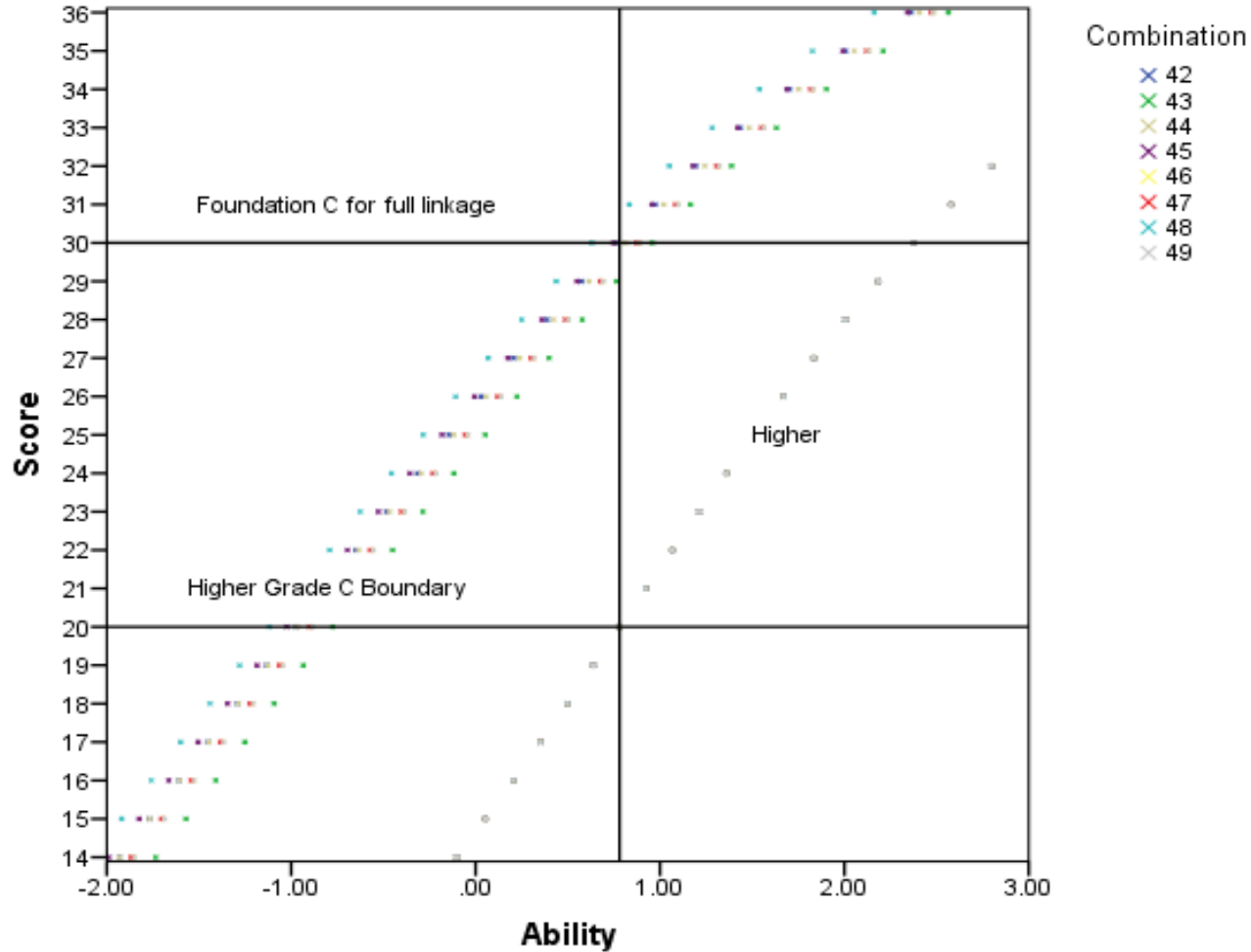
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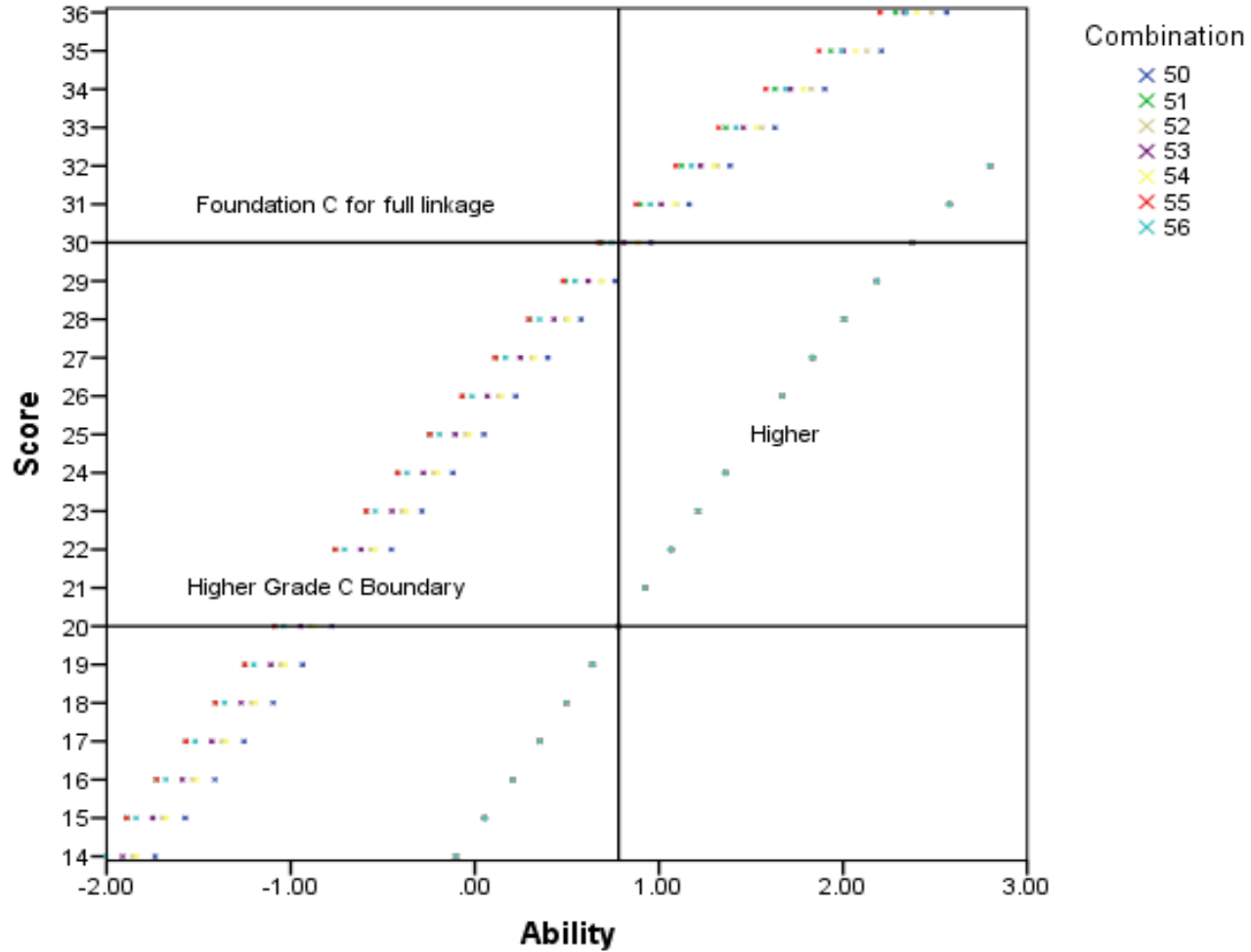
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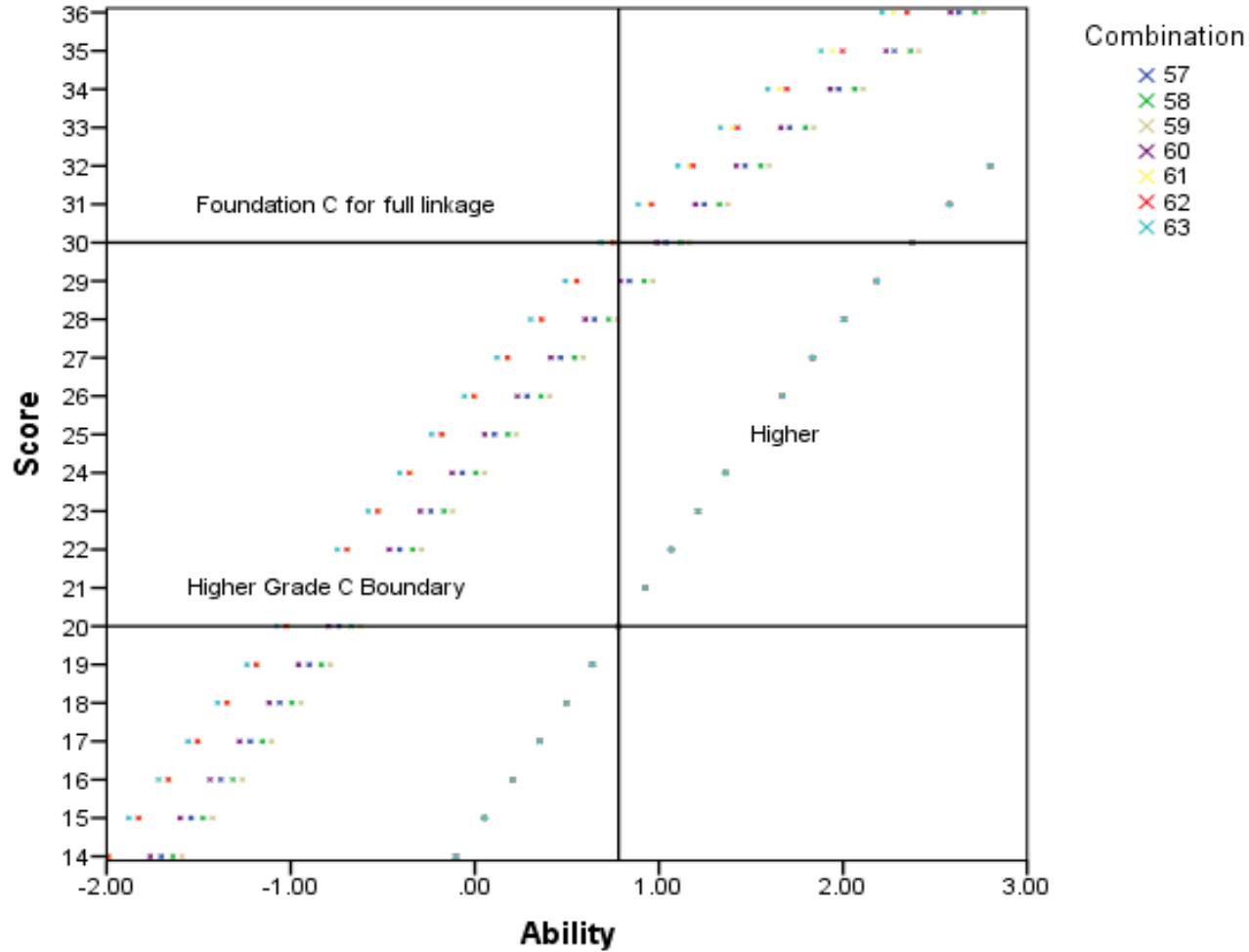
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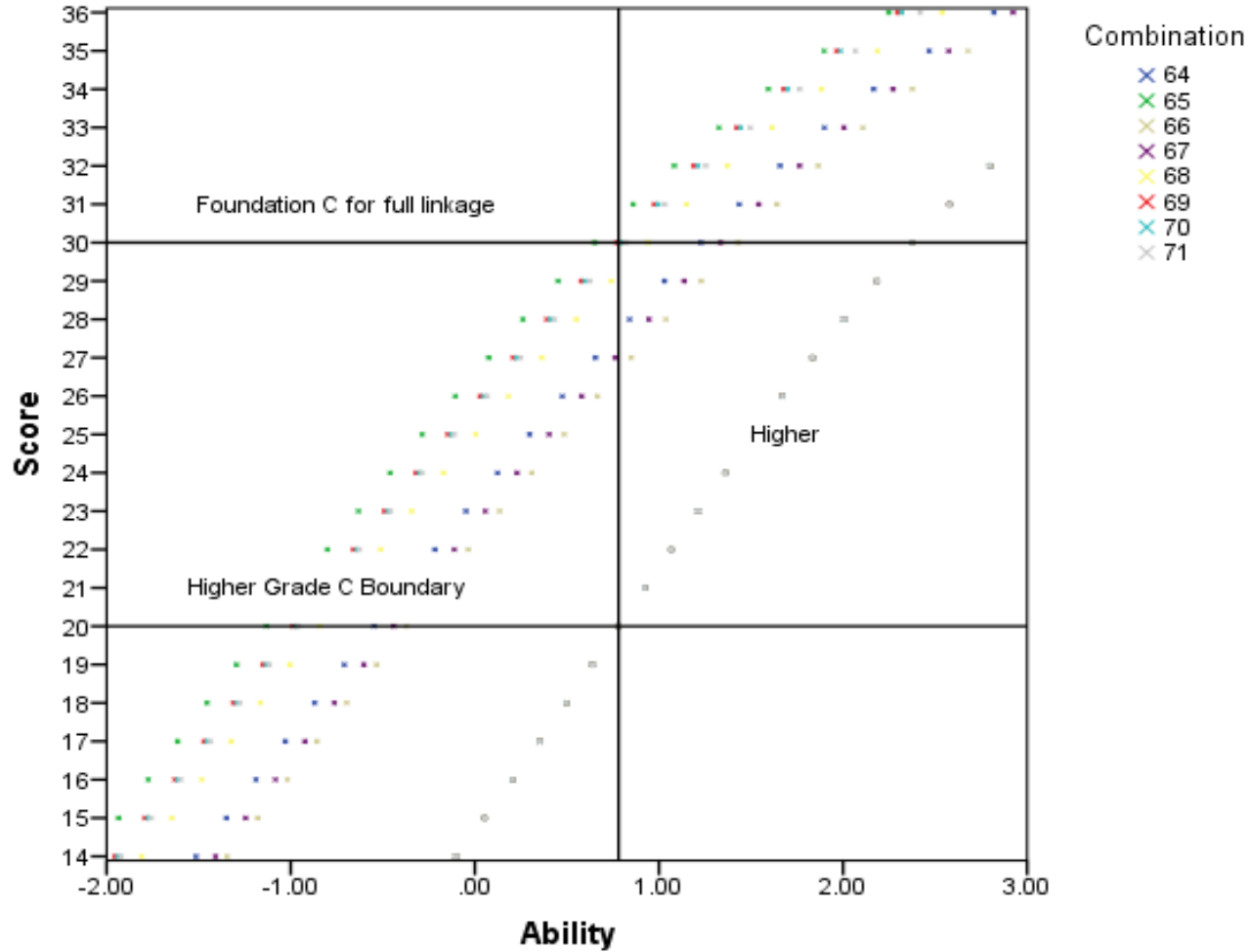
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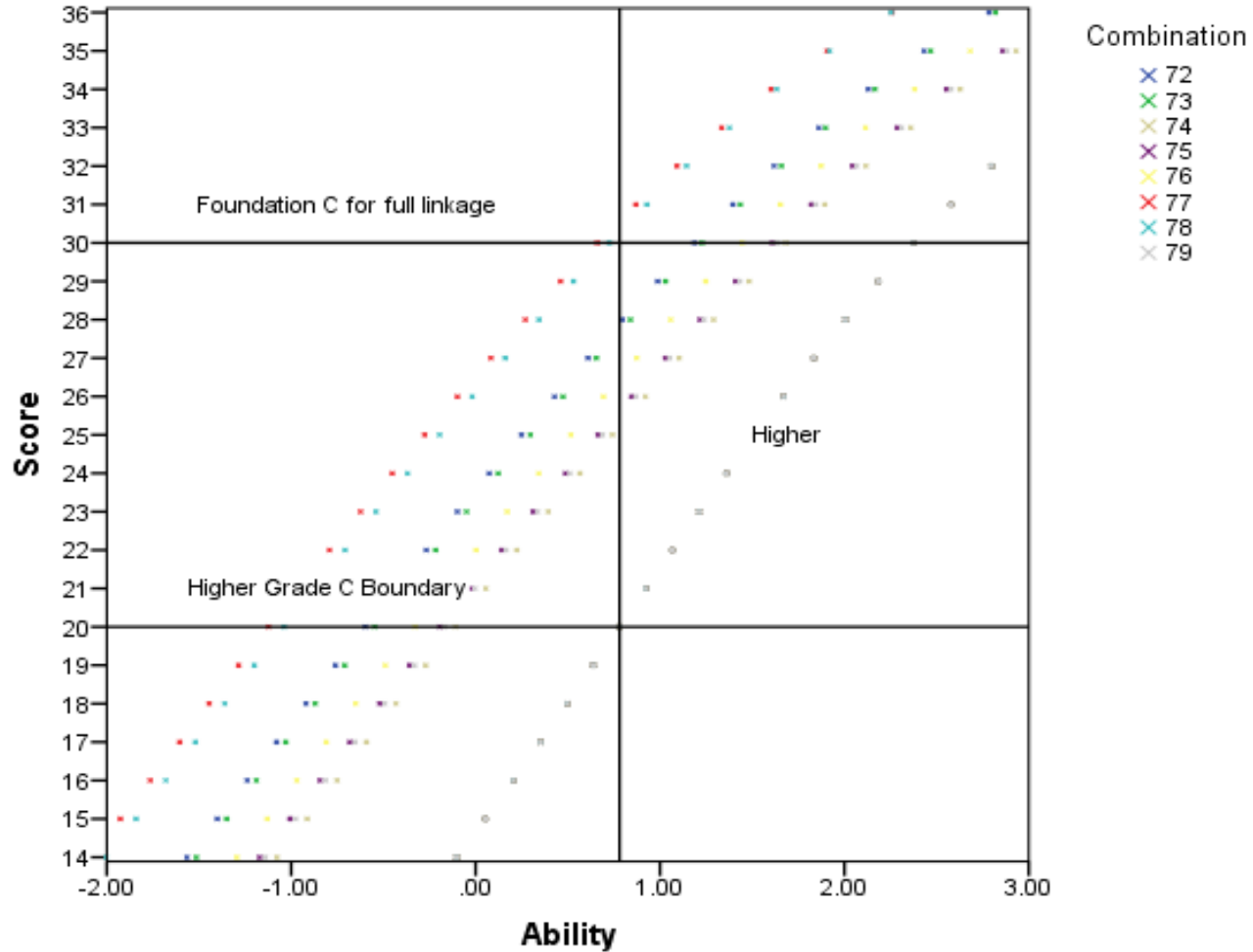
Number of common marks: 3



Number of common marks: 2



Number of common marks: 1







Concurrent, no linkage

Candidates

Tier	N	Mean	Std. Dev
Foundation	15881	-0.2366	0.8385
Higher	6311	0.0114	0.8034
Total	22129	-0.1661	0.8361

Items

Tier	N	Mean	Std. Dev
Foundation	115	-0.2222	1.6804
Higher	90	0.2839	1.0281
Total	205	0.0000	1.4500



Separate, no linkage

Candidates

Tier	N	Mean	Std. Dev
Foundation	15881	-0.0663	0.8366
Higher	6311	-0.9515	0.8002

Items

Tier	N	Mean	Std. Dev
Foundation	115	0.0000	1.7654
Higher	90	0.0000	1.6473



Concurrent, Full linkage

Candidates

Tier	N	Mean	Std. Dev
Foundation	15881	-0.3397	0.8457
Higher	6311	0.9544	0.7994
Total	22129	0.0283	1.0170

Items

Tier	N	Mean	Std. Dev
Foundation	115	-0.7399	1.2719
Higher	90	1.0984	0.9299
Total	205	0.0000	1.3438

- Thank you