Modern logicians represent the logical relationships between statements with a straightforward notation. For example, if we represent the statement “Canada is beautiful” with p, then we can represent the statement “Canada isn’t beautiful” with \( \neg p \) (read as “not p”). If we have two statements represented by p and q, then we can represent “if p, then q” as \( p \rightarrow q \), and similarly we can represent “p and q” and “p or q” as \( p \land q \) and \( p \lor q \), respectively. Pretty easy, right?

But things weren’t always this clear! In 1879, German logician Gottlob Frege published a seminal work on logic called Begriffsschrift, which literally translates to “concept script”. The notation he used, also called Begriffsschrift, confused many readers with its two-dimensional format and use of few symbols. That being said, the Begriffsschrift notation is a carefully thought-out system that adheres to formal rules. Here are some examples of Begriffsschrift formulas, with their translations into modern logical notation.

<table>
<thead>
<tr>
<th>Begriffsschrift</th>
<th>Modern notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>( B \lor A )</td>
<td>(( C \rightarrow B ) ( \rightarrow \neg A ))</td>
</tr>
<tr>
<td>( C \land \neg(B \rightarrow A) )</td>
<td>(( C \rightarrow \neg B ) ( \lor A ))</td>
</tr>
<tr>
<td>( (D \lor C) \land (B \land A) )</td>
<td></td>
</tr>
</tbody>
</table>
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M1. Translate from Begriffsschrift into modern notation:

M2. Match these sentences to letters A to F to correctly complete the Begriffsschrift formula below (note that there are two possible correct answers) in your answer sheets:

i. $x$ is a galaction
ii. the polyverse is Groop-normal
iii. $x$ is dingly
iv. $x$ has a sateotrope
v. $x$ is a quaxor
vi. $x$ is a pulsoid

M3: Explain how the Begriffsschrift notation works in your answer sheets
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1. 

2. i.  ii.  iii.  iv.  v.  vi.  

3. 

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