1)

$A \leftarrow \sigma_{(genre = pop\ song)}(GenreOfSong)$

$B \leftarrow \sigma_{(name=\ Taylor\ Smith)}(Artist)$

$\pi_{\{title\}}(A \bowtie Song \bowtie SongCreating \bowtie B)$

2)

$A \leftarrow \sigma_{(name=\ Taylor\ Smith)}(Artist)$

$B \leftarrow \sigma_{(name = Ed\ Sheeran)}(Artist)$

$\pi_{\{title\}}(Song \bowtie SongCreating \bowtie (A \cup B))$

3)

$A \leftarrow \sigma_{(genre = pop\ song)}(GenreOfSong)$

$B \leftarrow \sigma_{(genre = hip\text{-}hop)}(GenreOfSong)$

$C \leftarrow \pi_{\{name\}}(Artist \bowtie SongCreating \bowtie Song \bowtie A) - \pi_{\{name\}}(Artist \bowtie SongCreating \bowtie Song \bowtie B)$

$D \leftarrow \sigma_{(gender\ =Female\ )}(Artist)$

$E \leftarrow \sigma_{(company = Universal\ Music\ Group)}(Company)$

$F \leftarrow \pi_{\{name\}}(D \bowtie JoinIn \bowtie E)$

$G \leftarrow C \cap F$

4)

$A \leftarrow \pi_{\{sID\}}(Songcreating \bowtie \sigma_{(name = Taylor\ Smith)}(Artist))$

$B \leftarrow \pi_{\{aID\}}(\sigma_{(name = Taylor\ Smith)}Artist)$

$C \leftarrow \pi_{\{aID\}}(Songcreating \bowtie A) - B$

$D \leftarrow \pi_{\{aID,\ Genre\}}(Song\ Creating \bowtie GenreOfSong) \div \pi_{\{Genre\}}(GenreofSong)$

$E \leftarrow \pi_{\{name\}}(Artist \bowtie (C \cap D))$