

## COMPUTING METHODS IN HEP    Exercise 1    Spring 2026

(To be returned by 10:15 on Friday 23.1.)

1. **Create a git repository** for this course by forking the repo

<https://github.com/slehti/CompInHEP2026>

Commit all your answers into your git repo under

CompInHEP2026/Exercises/Ex<  $n$  >/returned\_answers/< *yourname* >.

Never commit data in your repo, or it will get too big. Please make sure that we have permission to access your repo.

Please give me instructions by email to [sami.lehti@cern.ch](mailto:sami.lehti@cern.ch) how to access your git repository.

2. **Create a LaTeX document** which contains Feynman graphs for the lowest order contributions to electron-positron annihilation (Fig.1.8 in Ref [1]). Place the two figures in parallel, and use a joint caption below the figures. Add reference using BibTeX.

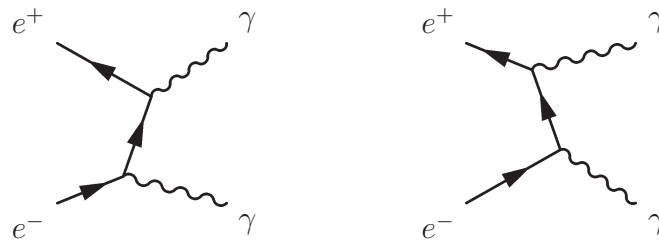


Figure 1: Feynman graphs for the lowest order contributions to electron-positron annihilation [1].

3. **Write a Makefile** which produces a pdf file from the source files used in 2.

## References

- [1] B.R. Martin and G. Shaw. Particle physics. *John Wiley & Sons, 1992.*