



Introduction

Astronomy, science, and technology growth are proportionally related. Research in astronomy has pushed to the state-of-the-art designing and utilization of instruments such as world-class radio telescopes and their applications, and vice versa. In practice, astronomical studies are greatly an interdisciplinary aspect of STEM subjects. This interdisciplinary nature of astronomy calls for advancement in STEM education. Improved STEM education will consequently result in industrial innovation for societal well-being and sustainable development. For this reason, TSSFL Open Discussion Forums (TSSFL ODF - <https://www.tssfl.com/>) is a leading platform that uses cutting-edge digital technologies to stimulate and promote learning experiences that motivate the emergence and development of abilities in STEM teaching, learning, and research.

TSSFL ODF is a knowledge base platform comprising a set of interactive forums that facilitate the exchange of valuable information and knowledge between students, scholars, and the general public for the purpose of solving real-life problems. Since 2020, TSSFL ODF infrastructure has been integrated with a number of third-party, open-source software, and web-based technologies that can be instantly deployed to provide inspiring and unprecedented cost-effective technology-assisted solutions in STEM education and research. Following various technological integrations, TSSFL ODF has become a very robust cloud environment for real-time teaching/learning, research, and problem-solving.

We illustrate graphically how TSSFL ODF employs these technologies to improve interaction, speed, flow, and accuracy of instructional materials to increase performance and optimize teaching and learning outcomes, and impactful research that can provide answers to numerous developmental challenges. We provide links to these technologies (<https://bit.ly/3caxDu0>) so that readers can navigate, interact, and try them.

Interactive COVID-19 Stats Map

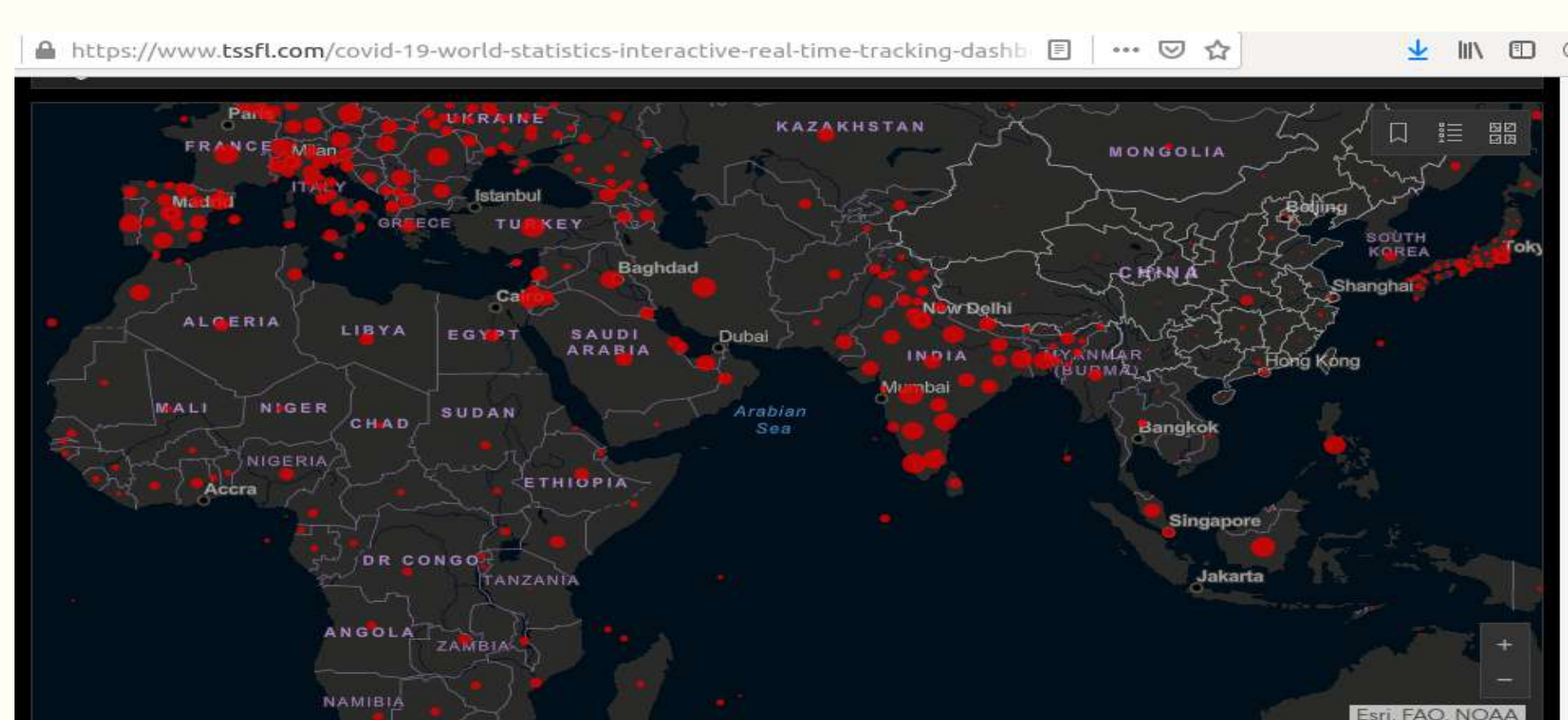
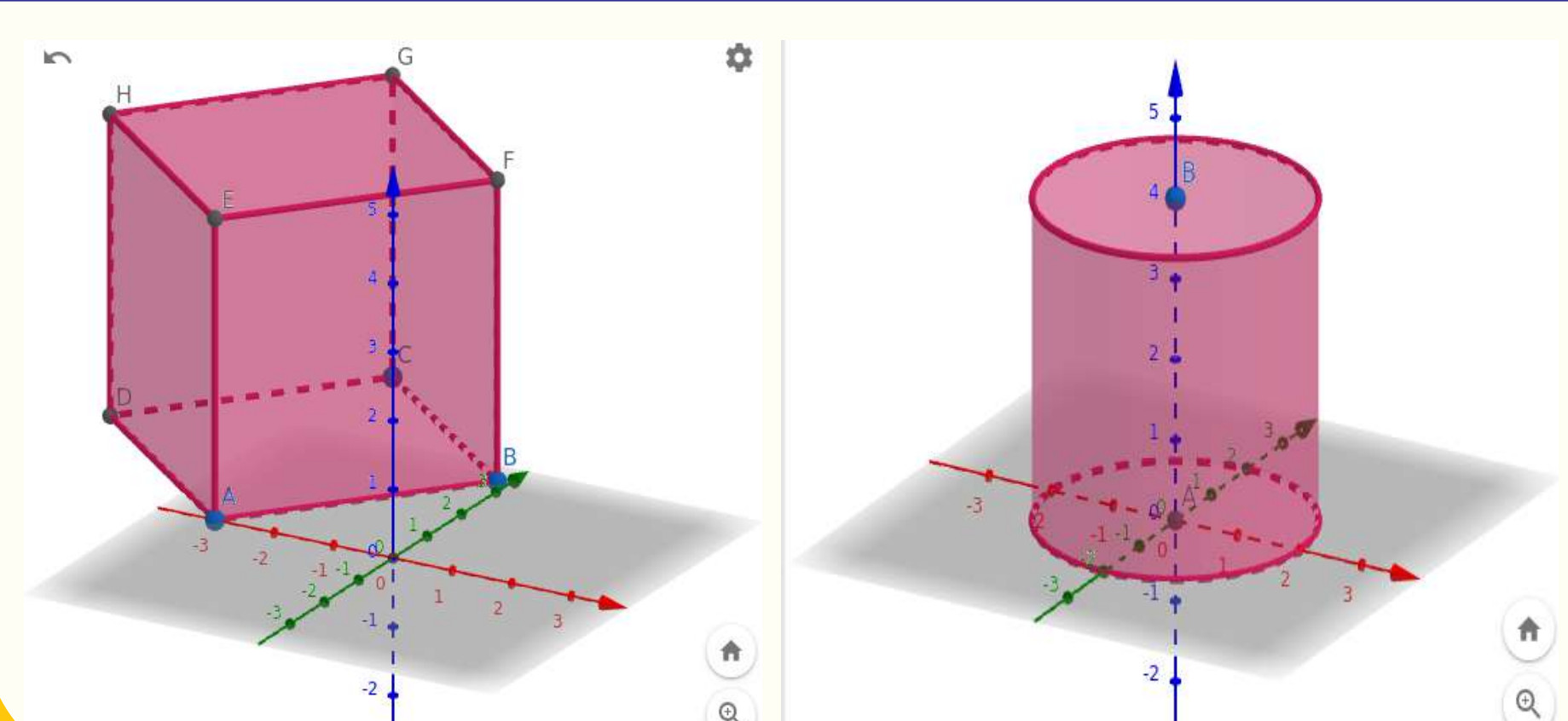


Figure 1: <https://bit.ly/2OdJEH7>

GeoGebra



GeoGebra

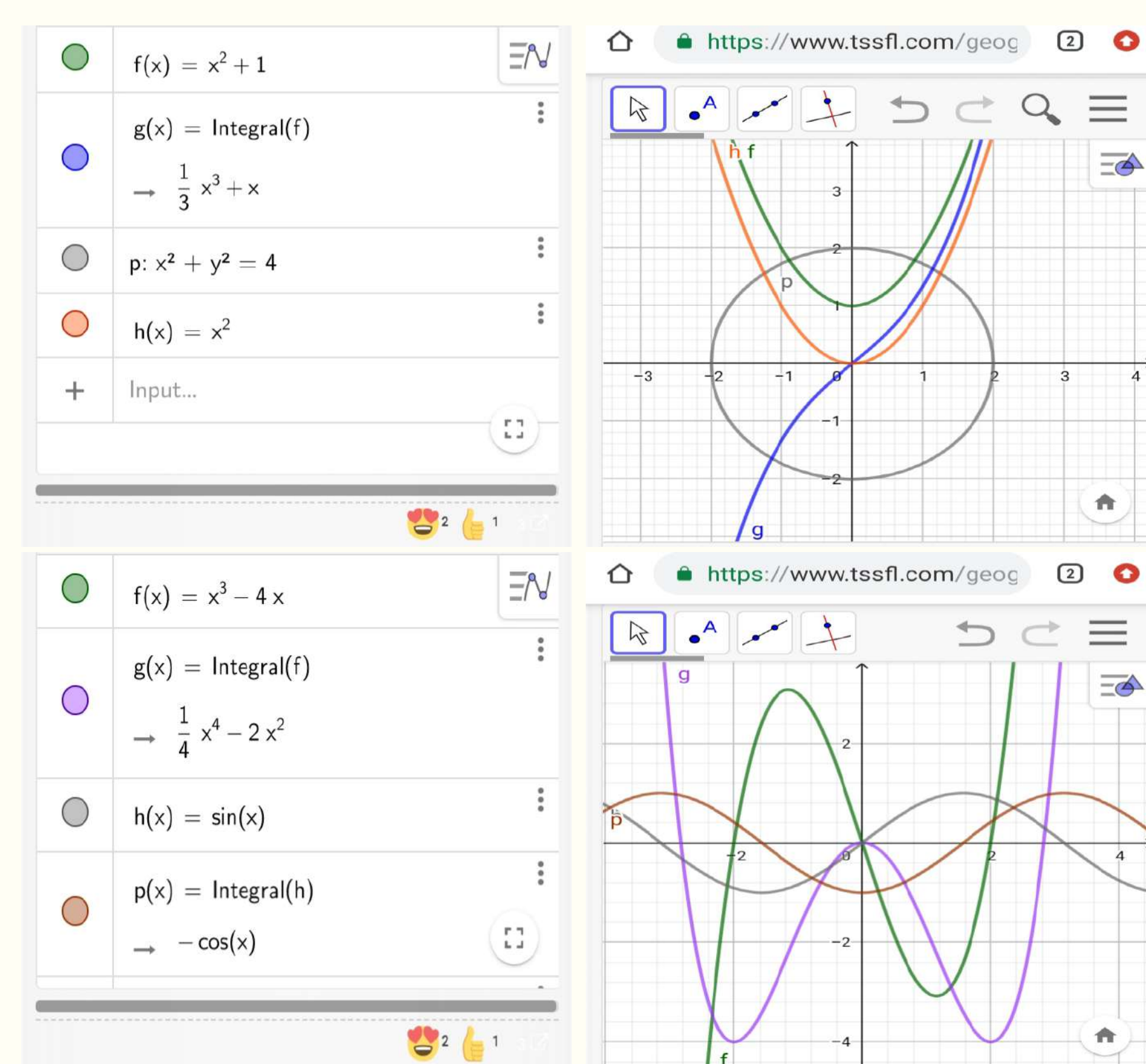


Figure 2: <https://bit.ly/3bnGwB6>

Desmos Calculator

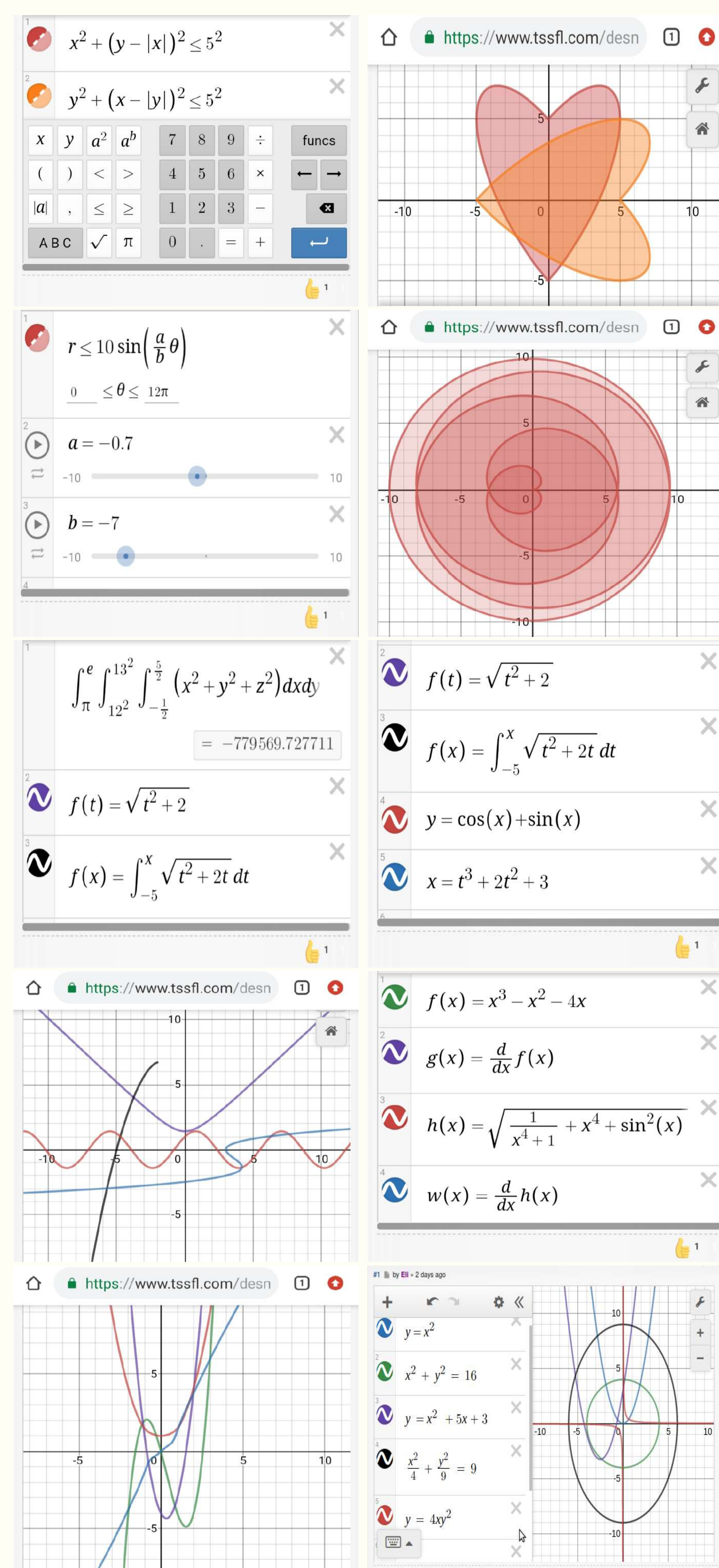


Figure 3: <https://bit.ly/38e2fda>

Computing with Sage

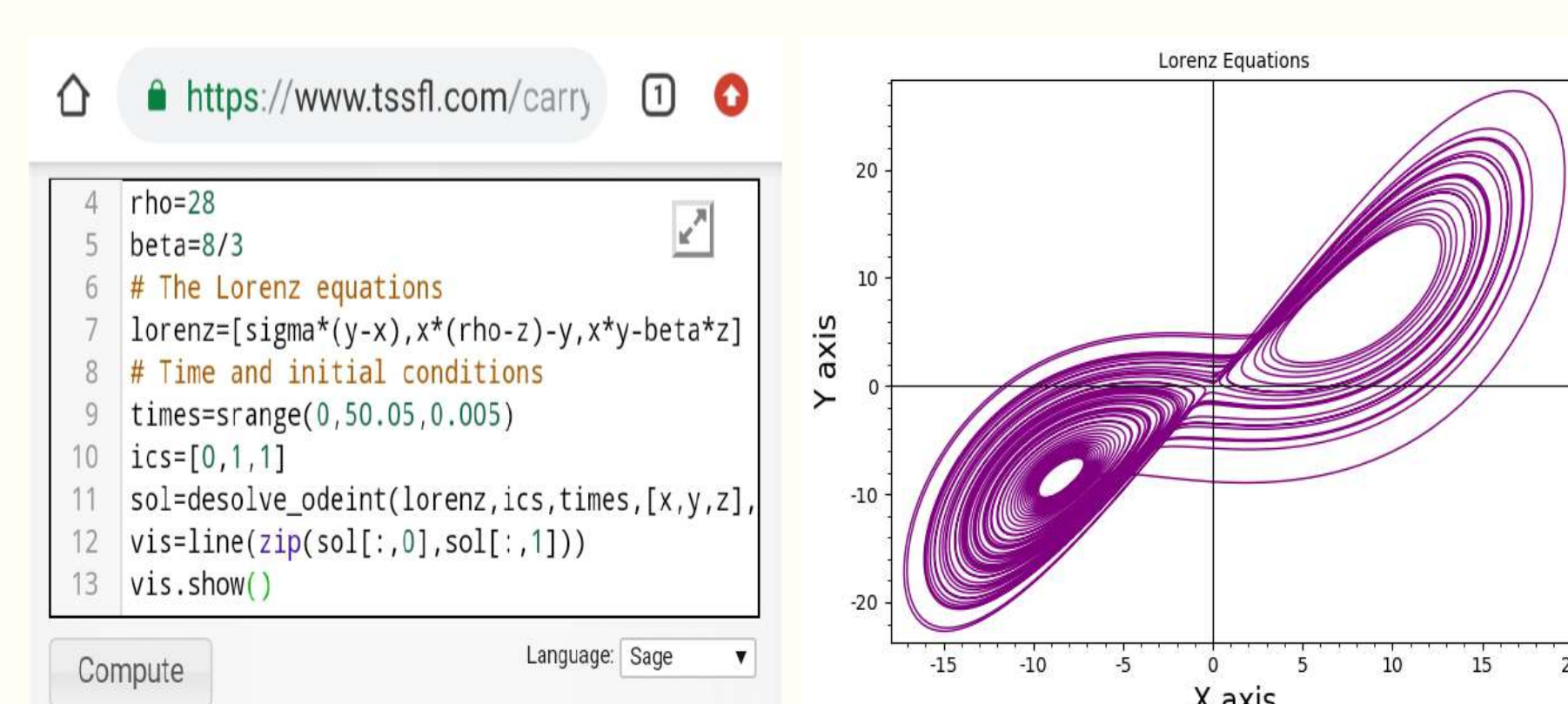


Figure 4: <https://bit.ly/3ei8KiI>

Computing with Python

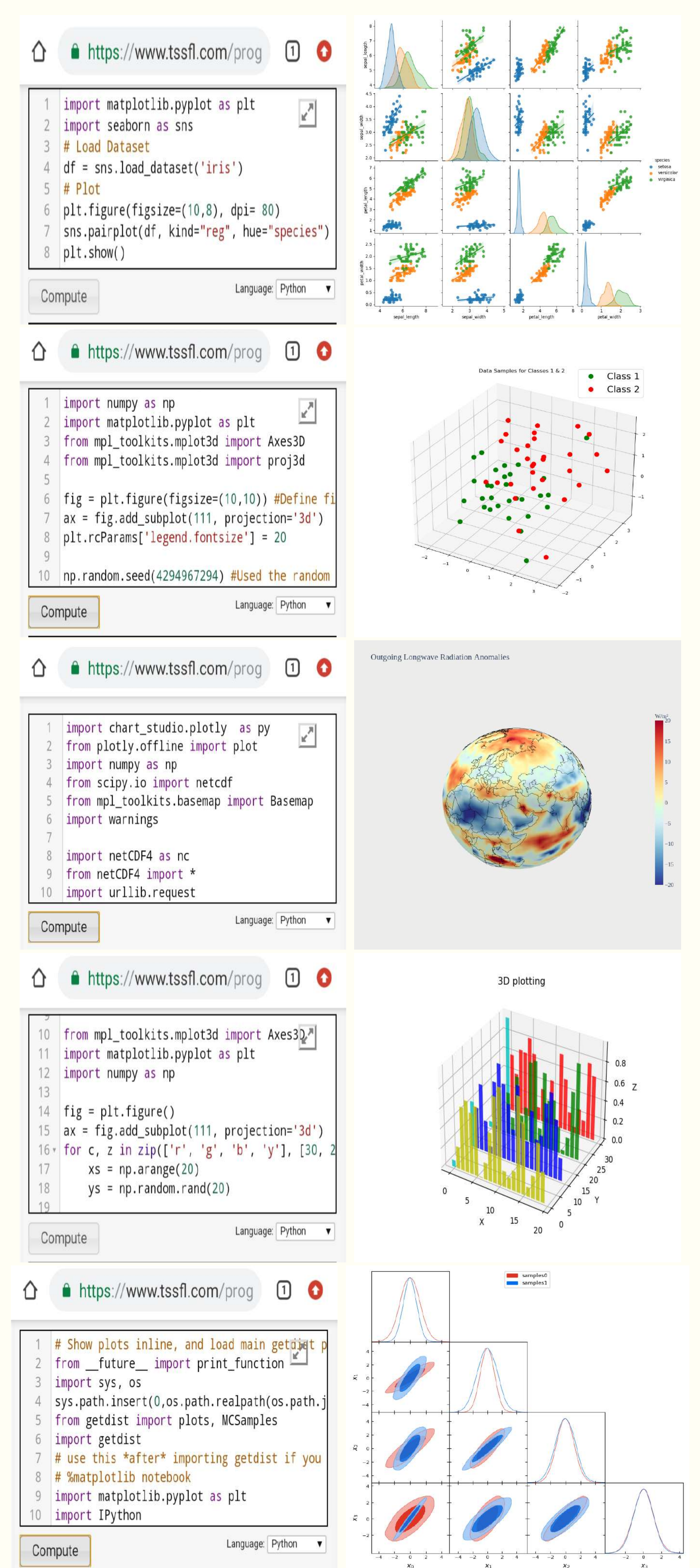


Figure 5: <https://bit.ly/2OcsJov>

Computing with R

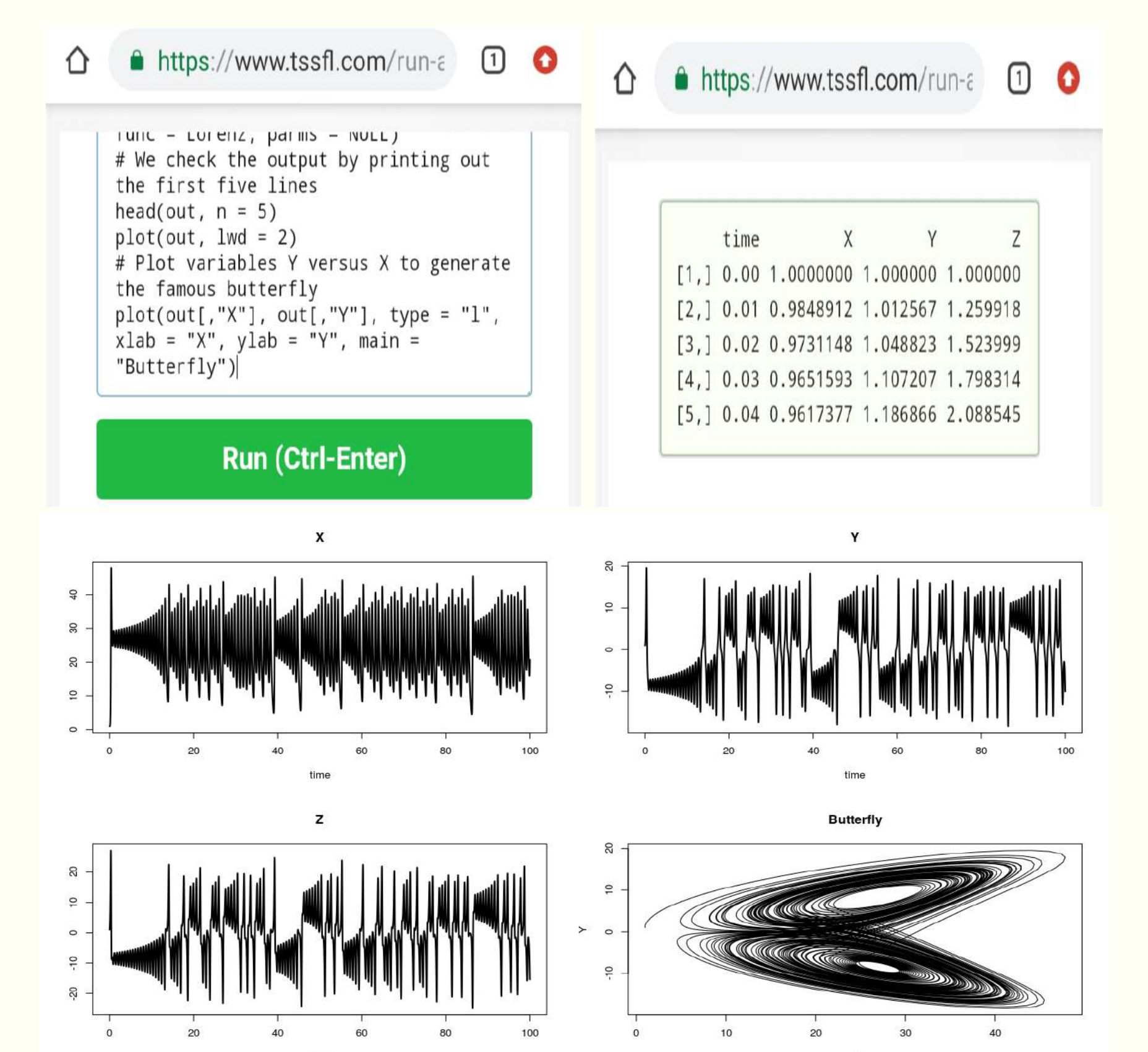


Figure 6: <https://bit.ly/3v5Jum2>

Conclusion

TSSFL ODF solves the infrastructure, time, technology, and spatial, constraints in education by organizing and harnessing technologies to facilitate communications in teaching/learning and research at any time and from anywhere, with high accuracy, reliability, speed, and convenience.