

# ***FACULTY NOTES***

The LTAs and Spinoffs are designed so that each professor can implement them in a way that is consistent with his/her teaching style and course objectives. This may range from using the materials as out-of-class projects with minimal in-class guidance to doing most of the work in class. The LTAs and Spinoffs are amenable to small group cooperative work and typically benefit from the use of some learning technology. Since the objective of the LTAs and Spinoffs is to support the specific academic goals you have set for your students, the Faculty Notes are not intended to be prescriptive. The purpose of the Faculty Notes is to provide information that assists you to take full advantage of the LTAs and Spinoffs. This includes suggestions for instruction as well as answers for the exercises.

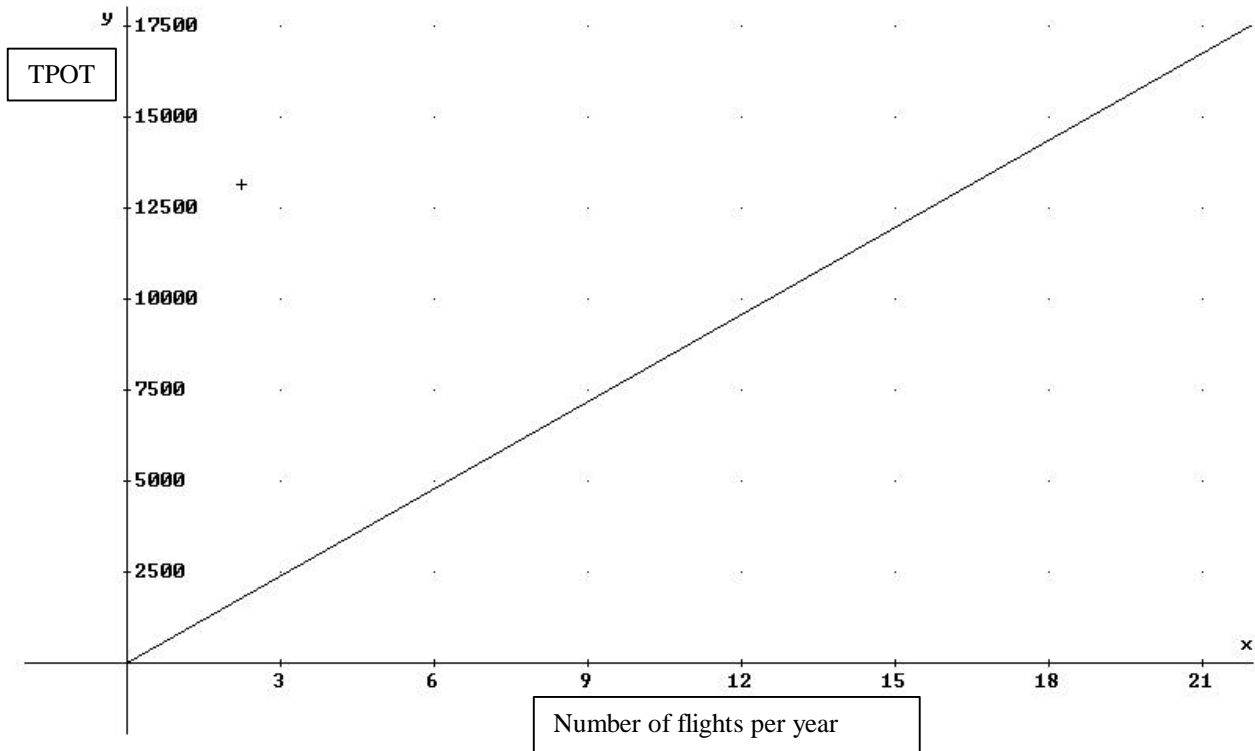


## SPINOFF 1B

### How the Number of Flights Per Year Changes the Total Projected Operating Time for Fuel Cells

1)  $TPOT = QPV * (FPOT + GPOT) * \text{flight rate per year}$   
 $= 3(230 + 36)X$   
 $= 798X$

2. a)



b)

Flights per Year	Total Projected Operating Time (TPOT)
5	3990 hours
8	6384 hours
12	9576 hours
15	11970 hours
20	15960 hours

- 3) The slope represents the total hours that the fuel cells will be in use for one flight.
- 4) The slope would change if the number of hours that the fuel cells are in use for each flight changes.

- 5) No. The function only makes sense for integer values of  $X$  since  $X$  stands for the number of flights per year.
- 6) Answers will vary.
- 7) 18 flights would be possible since the TPOT for 18 flights is 14,364 hours, but the TPOT for 19 flights is 15,162 hours.