

Exam 1 Period 3

1a Drag, Thrust, Lift, Gravity (acts straight down, not parallel)

b) Thrust

c) Third

d) Second

e) Higher velocity, higher drag force

f) larger drag force, lower height

2 a) i) higher

ii) credit for everyone, more subtle than planned

iii) moves up

iv) decreases or remains the same

b) still stable consider, cite c_p, c_g

c) expected to increase, but fuller analysis: additional weight may offset this

d) less stable c_p, c_g and caption

3 a) initial thrust reduced

b) higher, lower initial velocity

4) fuel: mid range, pressure: max, nose: small effect

Trials consistent with stated experience, at least one pressure should be at max

Reasoning must be consistent

5) a) All

b) Recognize as Fermi problem with some numerical estimates (fyi: 0.7 egg/person day)