Theory of Flight Test 2

Study Sheet

1. Be able to interpret the thrust required curve (8 items)
2. Be able to interpret the power available, power required curves (9 items)
3. Relationship of thrust and drag in curve form
4. Know how thrust changes with altitude changes
5. Know how specific range max changes with altitude
6. Relationship of thrust required to induced drag
7. Relationship of power required to induced drag
8. Items found at L/Dmax for a jet and prop
9. Items found at min power required for a prop and how to find it
10. Know how to compute power for an airplane in a climb
11. Know what role thrust plays in making an airplane climb
12. Know how and where to find max range for a jet
13. Be able to explain how to achieve max range as weight is decreased
14. Know the relationship between max range and altitude
15. Know the relationship between power, altitude and TAS
16. Compute specific fuel consumption and specific range
17. The whole excess power, excess thrust, vx, vy thing
18. Compute EAS for different altitudes if given the same thrust
19. Compute thrust hp for a given density ratio and EAS
20. Compute BHP
21. High altitude effects on the jet engine
22. Know how climb rate and cruise performance are effected by altitude
23. Know how weight effects best glide
24. Know the definition of specific range and endurance
25. Know how the curves move and change with changes in weight, configuration and what the root causes of those changes
26. Be able to figure hp required given a thrust required curve
27. CL and airfoil changes, including symmetrical airfoils
28. Know all the parasite drag types
29. Know all about induced drag
30. List all primary components the of jet engine
31. List types of burner cans, alloys, thrust reversers, compressors, advantages and disadvantages,
32. Be able to identify the aspects of the supercritical airfoil
33. Compute new stall speed for different weights
34. Compute cruise CL
35. Compute aspect ratio