Homework 5

Study Questions

Commercial AVF 221

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_ Score\_\_\_\_\_

1. Define the two types of stability
2. Define periodic motion
3. Define amplitude
4. Name the three subtypes of static and dynamic stability
5. Define controllability
6. Define maneuverability
7. What is longitudinal stability
8. How does propeller slipstream affect tail down force?
9. Where is the cg located relative to the center of lift?
10. What are the power effects on stability?
11. How may aircraft designers counter this problem?
12. How does loading affect longitudinal stability?
13. What may happen to longitudinal stability as fuel is burned off?
14. Does this happen in the Bonanza?
15. What are phugoid oscillations?
16. Are short mode oscillations dangerous?
17. How are they different from phugoid oscillations?
18. What is a link balance tab?
19. What is the range of motion of a stabilator compared to an elevator?
20. How does sweep back effect directional stability?
21. What is Dutch Roll?
22. What is lateral stability?
23. What is the most common design factor for positive static lateral stability?
24. What is adverse yaw?
25. How can designers overcome adverse yaw?
26. Define flutter
27. What are the 3 forces working on a wing in a flutter condition?
28. What is vertical stability?
29. What has the most effect on positive static vertical stability?