

PHASE I - KNOWLEDGE TEST

Student Name: _____ Date: _____

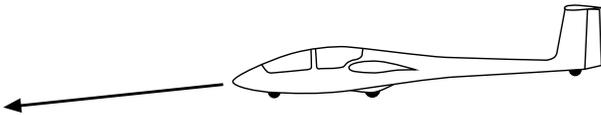
Instructor: _____

Glider Familiarization

1. What is the maneuvering speed of the glider?
2. What is the never exceed speed of the glider?

Aerodynamics

3. Draw and label the 3 forces acting on the glider in the figure below.



4. At a constant airspeed, how would doubling the angle of attack affect the lift?
5. What causes an airfoil to stall?
6. How will increasing the weight of the glider by 40% change the stall speed?
7. What causes a glider to turn?

8. What causes a skidding turn?
9. During a skidding turn, is the yaw string to the inside or the outside of the turn?
10. If the CG is too far aft, what effect will it have on the handling of the glider?

Flight Instruments and Systems:

11. As it rises, does a parcel of air get cooler or warmer? Why?
12. What is the difference between static pressure and total (or pitot) pressure?
13. Explain (or draw) how the altimeter, airspeed, and variometer work.
14. What does the yellow arc on the airspeed indicator mean?
15. What does the red line on the airspeed indicator mean?

Flight Maneuvers

16. How should the stick be held at the beginning of the takeoff roll?
17. What should the glider's attitude be right before it lifts off?

18. Where should you try to keep the tow plane with respect to the horizon during the tow?
19. How do you control your descent rate on final?
20. What are the items on the pre-landing checklist?
21. What speed should you fly in the pattern?
22. What should your position be relative to the runway on downwind?
23. How do you know when to turn base? Does the wind affect this?
24. Ideally, how should the spoilers be held during short final, the flare, and the hold off?
25. On short final, what should your airspeed be right before you start the flare?