

FARMHALL AVIATION TRAINING
Commercial Pilot Groundschool
Theory of Flight: Threshold Knowledge Test

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Version 1.4

Exercise 1 *An aircraft's wing produces lift primarily as a result of a principle enunciated by:*

- a Einstein*
- b Bernoulli*
- c Newton*
- d Marconi*

Exercise 2 *When gliding for range into a headwind the pilot can increase the range by:*

- a flying faster than normal*
- b flying slower than normal*
- c initiating a side-slip*
- d making a MAYDAY call*

Exercise 3 *Aircraft A is flying at 250 knots, aircraft B at 150 knots. Each initiates a right-hand rate-one turn. Which of the following statements is false:*

- a A's rate of turn is not less than B's*
- b B's rate of turn is not less than A's*
- c A's angle of bank is greater than B's*
- d B's radius of turn is greater than A's*

Exercise 4 *An aircraft is in a perfectly coordinated 45° banked turn to the left at a constant altitude. Which of the following statements are true:*

- 1. the aircraft is subject to a centrifugal force outwards—i.e. to the right*
- 2. part of the aircraft's lift is pulling it into the centre of the circle—i.e. to the left*
- 3. a passenger with her eyes closed would have a sensation of being pushed to the right*
- 4. a passenger with her eyes closed would have a sensation of falling to the left.*
- 5. a passenger with her eyes closed would have a sensation of being heavier than normal.*

a 1 and 5 are true

b 1, 3 and 5 are true

c 1 and 4 are true

d 2 and 5 are true

Exercise 5 *The worst wake turbulence comes from a heavy, ___ aircraft when it is flying ___. Wake turbulence stops when the aircraft ___.*

a clean, slowly, touches down

b dirty, slowly, touches down

c clean, slowly, enters ground effect

d dirty, quickly, touches down

Exercise 6 At the weight at which it is being flown, an aircraft's handbook indicates that it has a stall speed of 100 knots. When the aircraft is in a 60° banked turn, what is its stall speed?

- a 141 knots
- b 71 knots
- c 50 knots
- d 100 knots

Exercise 7 Drag that is caused by the production of lift is called:

- a Reinforcement Drag
- b Profile Drag
- c Parasitic Drag
- d Induced Drag

Exercise 8 Which of the following is intended to avoid a sudden, abrupt stall?

- a Dihedral
- b Sweepback
- c Washout
- d Flaps

Exercise 9 Which of the following statement(s) is/are true for an aircraft in level flight? A stall occurs:

- a when the wing reaches a certain angle of incidence irrespective of the aircraft's speed
- b at a particular speed irrespective of the aircraft's attitude
- c when the centre of pressure of a wing reaches its rearmost position
- d when the centre of pressure of a wing reaches its most forward position
- e when the wash-out of the wing becomes equal to the wash-in
- f when the Centre of Pressure coincides with the Centre of Gravity

g when the Angle of Attack exceeds a preset value

h when the Angle of Attack exceeds to Angle of Incidence

Exercise 10 Which of the following statements is true?

- a by flying at the Endurance Speed, a pilot will keep the aircraft flying for the maximum time on a gallon of fuel
- b by flying at the Endurance Speed, a pilot will cover as much ground as possible in a particular direction on a gallon of fuel
- c when flying at the Endurance Speed it is impossible to stall the aircraft
- d when flying at the Endurance Speed an aircraft will stall unless flaps are applied

Exercise 11 Which of the following is true?

- a Aileron drag is a type of induced drag
- b Aileron drag is used to reduce wing-tip vortices
- c Aileron drag can be reduced by using winglets
- d Aileron drag is reduced by using Frise ailerons

Exercise 12 Stability about the lateral axis is known as _____ stability, stability about the normal axis is known as _____ stability and stability about the longitudinal axis is known as _____ stability.

- a lateral, directional, longitudinal
- b longitudinal, yaw, bank
- c directional, yaw, pitch
- d longitudinal, directional, lateral