# Ch 3A, L3, 2H

Started: Jul 24 at 10:21am

# Quiz Instructions

Select the best answer.

Flag question: Question 1

## Question 1 1 pts

Select the true statement regarding the four forces of flight.

Group of answer choices

The four forces are in equilibrium during unaccelerated flight.

In straight-and-level unaccelerated flight, all four forces are equal in magnitude.

During accelerated flight, thrust and drag are equal.

Flag question: Question 2

## Question 2 9 pts

Identify the aerodynamic terms associated with the airfoil.

Group of answer choices

A

[ Choose ]

B

[ Choose ]

C

[ Choose ]

D

[ Choose ]

E

[ Choose ]

F

[ Choose ]

G

[ Choose ]

H

[ Choose ]

I

[ Choose ]

Flag question: Question 3

## Question 3 1 pts

Which of the following is a correct description of how Newton's laws of motion and Bernoulli's principle explain the generation of lift by an airfoil.

Group of answer choices

Bernoulli's principle says an increase in the speed of air on the top of an airfoil produces a drop in pressure and this lowered pressure is a component of total lift.

Bernoilli's principle describes how for every action there is an equal and opposite reaction.

Newton's third law of motion explains that the action of causing downwash results in a reaction of negative lift.

Flag question: Question 4

## Question 4 1 pts

True/False. As airspeed increases, the angle of attack at which an airfoil stalls also increases.

Group of answer choices

True

False

Flag question: Question 5

## Question 5 1 pts

Determine the aspect ratio of the airframe A.

Group of answer choices

- 3.4
- 7
- 6

Flag question: Question 6

## Question 6 1 pts

Identify three methods you can use to control lift during flight

Group of answer choices

- limit useful payload
- change AOA
- bank excessively
- employ high-lift devices
- change airspeed

Flag question: Question 7

## Question 7 1 pts

True/False. The wing's angle of attack increases when trailing edge flaps are lowered

Group of answer choices

- True
- False

Flag question: Question 8

## Question 8 1 pts

Is it more desirable for the wing root or wingtips to stall first?

Group of answer choices

wingtips

wing root

the whole wing itself

Flag question: Question 9

## Question 9 1 pts

Select the three forms of parasite drag.

Group of answer choices

weight drag

skin friction drag

form drag

induced drag

interference drag

Flag question: Question 10

## Question 10 1 pts

Which is the best description of why induced drag increases as airspeed decreases.

Group of answer choices

Induced drag is caused by the downwash created by wingtip vortices formed when the wing is generating lift.

Induced drag increases as airspeed decreases due to the large difference between propeller speed and airspeed.

Induced drag is caused by the higher angle of attack generating more drag on the elevator.

Flag question: Question 11

## Question 11 1 pts

The reduction in induced drag due to ground effect is most noticeable when the airplane is within what distance from the earth's surface?

Group of answer choices

6 feet

two wingspans

one wingspan

the longitudinal length of the airplane

Not saved

answers

# Ch 3A, L3, 2H Results for Martin Freiwald

Score for this attempt: **19** out of 19
Submitted Jul 23 at 10:41am
This attempt took 2 minutes.

Correct answer

## Question 1
**1 / 1 pts**

Select the true statement regarding the four forces of flight.

During accelerated flight, thrust and drag are equal.

The four forces are in equilibrium during unaccelerated flight.

In straight-and-level unaccelerated flight, all four forces are equal in magnitude.

Correct answer

## Question 2
**9 / 9 pts**

Identify the aerodynamic terms associated with the airfoil.

**A**

Upwash

**B**

Leading Edge

**C**

Trailing Edge

**D**

Downwash

**E**

Flight Path

**F**

Relative Wind

**G**

Camber

**H**

Chord Line

**I**

Angle of Attack

Correct answer

## Question 3

**1 / 1 pts**

Which of the following is a correct description of how Newton's laws of motion and Bernoulli's principle explain the generation of lift by an airfoil.

Bernoilli's principle describes how for every action there is an equal and opposite reaction.

Bernoulli's principle says an increase in the speed of air on the top of an airfoil produces a drop in pressure and this lowered pressure is a component of total lift.

Newton's third law of motion explains that the action of causing downwash results in a reaction of negative lift.

Correct answer

## Question 4

1 / 1 pts

True/False. As airspeed increases, the angle of attack at which an airfoil stalls also increases.

True

False

Correct answer

## Question 5

1 / 1 pts

Determine the aspect ratio of the airframe A.

6

7

3.4

Correct answer

## Question 6

1 / 1 pts

Identify three methods you can use to control lift during flight

employ high-lift devices

limit useful payload

☑ change airspeed

☐ bank excessively

☑ change AOA

Correct answer

## Question 7
**1 / 1 pts**

True/False. The wing's angle of attack increases when trailing edge flaps are lowered

◉ True

○ False

Correct answer

## Question 8
**1 / 1 pts**

Is it more desirable for the wing root or wingtips to stall first?

◉ wing root

If the wingtips stall before the root, the disrupted airflow near the wingtip can reduce aileron effectiveness to such an extent that it may be impossible to control the airplane about its longitudinal axis

○ the whole wing itself

○ wingtips

Correct answer

## Question 9

1 / 1 pts

Select the three forms of parasite drag.

- [x] interference drag
- [x] skin friction drag
- [ ] weight drag
- [ ] induced drag
- [x] form drag

Streamlining decreases form drag, and design features, such as wheel fairings and retractable landing gear, can reduce both form and interference drag. Skin friction drag can be minimized by eliminating protruding rivet heads, and employing a glossy, smooth finish to airplane surfaces.

Correct answer

## Question 10

1 / 1 pts

Which is the best description of why induced drag increases as airspeed decreases.

- (•) Induced drag is caused by the downwash created by wingtip vortices formed when the wing is generating lift.
- ( )

Induced drag increases as airspeed decreases due to the large difference between propeller speed and airspeed.

Induced drag is caused by the higher angle of attack generating more drag on the elevator.

Correct answer

## Question 11

**1 / 1 pts**

The reduction in induced drag due to ground effect is most noticeable when the airplane is within what distance from the earth's surface?

6 feet

the longitudinal length of the airplane

one wingspan

two wingspans

Quiz Score: **19** out of 19

# Ch 3A, L3, 2H Results for Martin Freiwald

Score for this attempt: **16.33** out of 19

Submitted Jul 23 at 10:34am

This attempt took 13 minutes.

Correct answer

## Question 1

**1 / 1 pts**

Select the true statement regarding the four forces of flight.

The four forces are in equilibrium during unaccelerated flight.

In straight-and-level unaccelerated flight, all four forces are equal in magnitude.

During accelerated flight, thrust and drag are equal.

Correct answer

## Question 2

**9 / 9 pts**

Identify the aerodynamic terms associated with the airfoil.

**A**

Upwash

**B**

Leading Edge

**C**

Trailing Edge

**D**

Downwash

**E**

Flight Path

**F**

Relative Wind

**G**

Camber

**H**

Chord Line

**I**

Angle of Attack

Correct answer

## Question 3

### 1 / 1 pts

Which of the following is a correct description of how Newton's laws of motion and Bernoulli's principle explain the generation of lift by an airfoil.

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Bernoulli's principle says an increase in the speed of air on the top of an airfoil produces a drop in pressure and this lowered pressure is a component of total lift.

Newton's third law of motion explains that the action of causing downwash results in a reaction of negative lift.

Correct answer

## Question 4

### 1 / 1 pts

True/False. As airspeed increases, the angle of attack at which an airfoil stalls also increases.

True

False

Correct answer

## Question 5

### 1 / 1 pts

Determine the aspect ratio of the airframe A.

3.4

7

6

Wrong answer

## Question 6

### 0 / 1 pts

Identify three methods you can use to control lift during flight

employ high-lift devices

bank excessively

limit useful payload

change airspeed

change AOA

Correct answer

## Question 7

### 1 / 1 pts

True/False. The wing's angle of attack increases when trailing edge flaps are lowered

True

False

Correct answer

## Question 8

### 1 / 1 pts

Is it more desirable for the wing root or wingtips to stall first?

wingtips

the whole wing itself

wing root

If the wingtips stall before the root, the disrupted airflow near the wingtip can reduce aileron effectiveness to such an extent that it may be impossible to control the airplane about its longitudinal axis

## Question 9

### 0.33 / 1 pts

Select the three forms of parasite drag.

interference drag

weight drag

skin friction drag

induced drag

☑

form drag

Wrong answer

## Question 10

### 0 / 1 pts

Which is the best description of why induced drag increases as airspeed decreases.

Induced drag is caused by the downwash created by wingtip vortices formed when the wing is generating lift.

Induced drag increases as airspeed decreases due to the large difference between propeller speed and airspeed.

Induced drag is caused by the higher angle of attack generating more drag on the elevator.

Correct answer

## Question 11

### 1 / 1 pts

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one wingspan

two wingspans

6 feet

Quiz Score: **16.33** out of 19