

Unit 4 - Week 03

Course outline

How does an NPTEL online course work?

Week 01

Week 02

Week 03

- Review
- Thrust Required: A Closer Look
- Modeling of CL: Dimensional Analysis
- A Closer Look: Point Mass Model, Dimensional Analysis
- Estimation of Drag Polar Through Flight Test
- Estimation of Rate of Climb

Quiz : Assignment 03

Feedback For Week 3

Assignment 03 Solution

Week 04

WEEK 05

WEEK 06

WEEK 07

WEEK 08

Text Transcripts

VIDEO DOWNLOADS

Assignment 03

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-19, 23:59 IST.

1) **Data for question No: 1 to 3**

2 points

The drag polar of an airplane is given by: $C_D = 0.035 + 0.03.C_L^2$
If the weight of the airplane is 500 kg, Wing area of airplane is 10 m^2 airplane speed during climb is speed of 50 m/s.

Note: Climb angle is 15°

The load factor ($n=L/W$) will be?

- >1
- =0
- <1
- =0

No, the answer is incorrect.
Score: 0

Accepted Answers:
<1

2) The drag coefficient will be?

2 points

- 0.0250
- 0.0220
- 0.0378
- 0.0381

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.0378

3) The value of thrust required (In Newton) to perform this climb will be?

2 points

- 315.48
- 220.89
- 583.32
- 580.16

No, the answer is incorrect.
Score: 0

Accepted Answers:
580.16

4) To improve the climb performance, which one of the following is the correct combination?

2 points

- Higher the weight, higher the drag and higher the thrust
- Lower the weight, lower the drag and lower the thrust
- Higher the weight, lower the drag and higher the thrust
- Lower the weight, lower the drag and higher the thrust

No, the answer is incorrect.
Score: 0

Accepted Answers:
Lower the weight, lower the drag and higher the thrust

5) The excess power of the airplane determines?

2 points

- Rate of climb performance
- Level-flight performance
- Gliding-flight performance
- None of these

No, the answer is incorrect.
Score: 0

Accepted Answers:
Rate of climb performance