Unit 11 - Week 9

Assignment 9

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

Due on 2020-11-18, 23:59 IST.

1) Which of the following Constraints is/are depend(s) only on Wing Loading, (W/S)? *1 point*

- [ ] Instantaneous Turn Rate
- [ ] Landing Distance
- [ ] Climb Gradient
- [ ] Sustained Turn Rate
- [ ] Stalling Speed

No, the answer is incorrect.
Score: 0
Accepted Answers:
Instantaneous Turn Rate
Landing Distance
Stalling Speed

2) Which of the following Constraints is/are depend(s) only on T/W? *1 point*

- [ ] Absolute Ceiling
- [ ] Missed Approach Gradient
- [ ] Landing Distance
- [ ] Climb Gradient

No, the answer is incorrect.
Score: 0
Accepted Answers:
Missed Approach Gradient
Climb Gradient

3) T/W for a Sustained Turn as a function of Wing Loading is: *1 point*

- $\frac{T}{W} = q\left[\frac{C_{Dmin}}{(W/S)} + k\left(\frac{n}{q}\right)\left(\frac{W}{S}\right)\right]$
- $\frac{T}{W} = q\left[\frac{C_{Dmin}}{(W/S)} + k\left(\frac{n}{q}\right)^2\left(\frac{W}{S}\right)\right]$
- $\frac{T}{W} = \left[\frac{C_{Dmin}}{(W/S)} + k\left(\frac{n}{q}\right)\left(\frac{W}{S}\right)\right]$
- $\frac{T}{W} = \left[\frac{C_{Dmin}}{(W/S)^2} + k\left(\frac{n}{q}\right)\left(\frac{W}{S}\right)\right]$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$\frac{T}{W} = q\left[\frac{C_{Dmin}}{(W/S)} + k\left(\frac{n}{q}\right)^2\left(\frac{W}{S}\right)\right]$

4) The Design Point in a Constraint Diagram is chosen as a point that corresponds to? *1 point*

- Lowest T/W and Lowest W/S
- Lowest T/W but Highest W/S
- Highest T/W and Highest W/S
- Highest T/W but Lowest W/S

No, the answer is incorrect.
Score: 0
Accepted Answers:
Lowest T/W but Highest W/S

5) Calculate the Wing Loading in kg/sq.m, meeting the requirement of Stall Velocity of 30 m/s, with the maximum lift coefficient 1.5 at sea-level under ISA Conditions

Hint

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 84,85

1 point

6) Which of the following parameters is/are the Raymer's Big Six parameters? *1 point*

- [ ] Taper Ratio
- [ ] Wing Sweep Angle
- [ ] Aspect Ratio
- [ ] Zero-Lift Drag Coefficient
- [ ] Thrust Loading
- [ ] Wing Loading

No, the answer is incorrect.
Score: 0
Accepted Answers:
Taper Ratio
Wing Sweep Angle
Aspect Ratio
Thrust Loading
Wing Loading

7) Calculate the minimum value of T/W, if C_{Do} = 0.012, Climb Gradient (G) = 0.15, Wing Aspect Ratio = 7, and Oswald efficiency factor (e) = 0.87.

Hint

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 0.175,0.250

1 point

8) According to FAR25, what is the second stage climb gradient for the twin engine powered aircraft? *1 point*

- 3.0 %
- 2.7 %
- 2.4 %
- 2.2 %

No, the answer is incorrect.
Score: 0
Accepted Answers:
2.4 %

9) Second stage climb gradient depends upon *1 point*

- [ ] Thrust-Weight Ratio
- [ ] Number of Engines
- [ ] Wing Loading
- [ ] Lift-Drag Ratio

No, the answer is incorrect.
Score: 0
Accepted Answers:
Thrust-Weight Ratio
Number of Engines
Lift-Drag Ratio