

## Aspect ratio

- 1 An aircraft has 500 sq ft wing area, weighs 1000kg, and has a 63 ft span. What is the aspect ratio?
  - a) 5:1
  - b) 8:1
  - c) 10:1
  - d) 20:1
  
- 2 An aircraft has 150 sq ft wing area, weighs 750kg, and has a 30 ft span. What is the aspect ratio?
  - a) 5
  - b) 8
  - c) 10
  - d) 6
  
3. Aircraft A has an aspect ratio of 8:1 and aircraft B has an aspect ratio of 10:1. For a given thrust and angle of attack
  - a) Aircraft A would be slower than B
  - b) Aircraft B would be slower than A
  - c) Both aircraft would be at the same speed
  - d) Both aircraft would be at the same speed, but aircraft B would produce more lift
  
- 4 If aspect ratio is halved induced drag will
  - a) decrease by half
  - b) decrease by 4 times
  - c) double
  - d) increase by half
  
- 5 Increasing aspect ratio
  - a) reduces form drag
  - b) reduces interference drag
  - c) reduces profile drag
  - d) reduces induced drag
  
- 6 If aspect ratio of a wing is increased
  - a) the stalling angle will be greater
  - b) the stalling speed will be less
  - c) the stalling angle will be less
  - d) the stalling angle will be greater.

- 7 Aspect ratio is defined as
- a) span multiplied by chord
  - b) span divided by chord
  - c) chord multiplied by span
  - d) span squared over chord
8. A wing with a lower aspect ratio than another will stall at a higher angle of attack because
- a) the camber is greater over the upper surface
  - b) the camber is less over the upper surface
  - c) the stall speed is lower
  - d) the leading edge radius is larger
9. A wing with a higher aspect ratio than another will stall at a lower angle of attack because
- a) the camber is greater over the upper surface
  - b) the camber is less over the upper surface
  - c) the stall speed is lower
  - d) the leading edge radius is larger
10. For a wing of a given aspect ratio, flying at a given TAS and angle of attack, what effect will increasing the aspect ratio have on the CL
- a) CL will not change
  - b) CL will decrease
  - c) CL will only change with speed
  - d) CL will increase
- 11 The aspect ratio of a tapered wing can be found from the formula:
- a) span divided by the chord at the wing root;
  - b) span squared divided by the wing area;
  - c) span divided by the chord at the wing tip;
  - d) wing area divided by the average chord.

## Answers

**1.b 2.d 3.b 4.c 5.d 6.c 7.b 8.b 9.a 10.d 11.b**