

Friday, January 4

# Clicker Questions

## Clicker Question 1

A jet plane lands on a runway, traveling 70 metres per second. The jet continues down the runway, braking constantly, for 30 seconds before turning off the runway towards the gate. The co-pilot takes note of the speed at 5-second intervals:

time after landing (sec)	0	5	10	15	20	25	30
speed (m/sec)	70	64	54	40	28	12	10

For which of the following distances can you be sure the jet traveled **at least** that far in those 30 seconds?

- A. 2100 m
- B. 1340 m
- C. 1040 m
- D. 300 m
- E. no way to be sure

## Clicker Question 2

A jet plane lands on a runway, traveling 70 metres per second. The jet continues down the runway, braking constantly, for 30 seconds before turning off the runway towards the gate. The co-pilot takes note of the speed at 5-second intervals:

time after landing (sec)	0	5	10	15	20	25	30
speed (m/sec)	70	64	54	40	28	12	10

For which of the following distances can you be sure the jet traveled **at most** that far in those 30 seconds?

- A. 2100 m
- B. 1340 m
- C. 1040 m
- D. 300 m
- E. no way to be sure

## Clicker Question 3

### Sigma notation

What quantity does the expression

$$\sum_{i=3}^6 (x_i + i)^2$$

represent?

- A.  $(x_1 + 1)^2 + (x_2 + 1)^2 + (x_3 + 1)^2 + (x_4 + 1)^2 + (x_5 + 1)^2 + (x_6 + 1)^2$
- B.  $(x_3 + i)^2 + (x_4 + i)^2 + (x_5 + i)^2 + (x_6 + i)^2 + (x_7 + i)^2 + (x_8 + i)^2$
- C.  $(x_i + 3)^2 + (x_i + 4)^2 + (x_i + 5)^2 + (x_i + 6)^2 + (x_i + 7)^2 + (x_i + 8)^2$
- D.  $(x_3 + 3)^2 + (x_4 + 4)^2 + (x_5 + 5)^2 + (x_6 + 6)^2$
- E.  $3(x_i + i)^2$

## Clicker Question 4

### Testing out new notation

Write down a **definite integral** representing the **area of the top-left quarter circle of radius 5 centred at the origin.**

A.  $\int_{-5}^0 (x^2 + y^2) dx$

B.  $\int_1^n \sqrt{25 - x^2} dx$

C.  $\int_{-5}^0 \sqrt{25 - x^2} dx$

D.  $\int_1^n (x^2 + y^2) dx$

E.  $\int_0^5 \sqrt{25 - x^2} dx$