

Practise Questions 3

SUVAT

1

- An aeroplane accelerates down a runway at 3.20 m/s^2 for 32.8 s until it finally lifts off the ground. Determine the distance travelled before take off.

2

- A Holden starts from rest and accelerates uniformly over a time of 5.21 seconds for a distance of 110 m. Determine the acceleration of the Holden.

3

- Charlie Physics is riding the Pinjara Trophy at Pinjara. If Charlie free falls for 2.6 seconds, what will be his final velocity and how far will he fall?

4

- A racing car accelerates uniformly from 18.5 m/s to 46.1 m/s in 2.47 seconds. Determine the acceleration of the vehicle and the distance travelled.

5

- A white feather is dropped on the moon from a height of 1.40 meters. The acceleration of gravity on the moon is 1.67 m/s^2 . Determine the time for the white feather to fall to the surface of the moon.

6

- Rocket powered sledges are used to test the human response to acceleration. If a rocket powered sledge is accelerated to a speed of 444 m/s in 1.8 seconds, then what is the acceleration and what is the distance that the sledge travels?

7

- A motor bike accelerates uniformly from rest to a speed of 7.10 m/s over a distance of 35.4 m . Determine the acceleration of the motorbike.

8

- An consultant engineer is designing the runway for an airport. Of all the planes that will use the airport, the lowest acceleration rate is likely to be 3 m/s^2 . The take off speed for this plane will be 65 m/s . Assuming this minimum acceleration, what is the minimum allowed length for the runway?

9

- A vehicle traveling at 22.4 m/s skids to a stop in 2.55 s . Determine the skidding distance of the vehicle (assume uniform acceleration).

10

- A *Macropus* is capable of jumping to a height of 2.62 m. Determine the take off speed of the *Macropus*.