Question 12 **(6 marks)**

The horizontal displacement of a Ferris wheel cabin exhibits simple harmonic motion. The maximum horizontal speed is $\frac{\pi}{2}$ metres per second and its period of motion is exactly 60 seconds.

Let $x(t) = A\cos(nt)$ be the horizontal displacement after t seconds.

(a) Determine the values of A and n. (3 marks)

(b) Determine the horizontal acceleration, correct to the nearest 0.001 m/s^2, when the horizontal displacement is 10 metres. (3 marks)