For each of the following questions please write the most correct answer in using CAPITAL LETTERS in the space provided.

**Question 1**
A 5 kg block is sitting at rest on a frictional inclined plane. The incline plane makes an angle of 20° with the horizontal. What is the magnitude of the force due to static friction acting on the block? Use $g = 10 \text{ m/s}^2$ for ease of calculation.

(A) 17 N
(B) 45 N
(C) 50 N
(D) 33 N
(E) I need to know $\mu_s$ to answer this.

Answer: A

**Question 2**
A space station is constructed out in deep space consisting of a large ring the radius of which is 200 meters. The space station spins around its axis to simulate gravity for the astronauts. How fast must the outer rim of the station be traveling for the astronauts inside to experience a normal force from the wall of the station that is the same as they would experience standing on the ground on earth.

For ease of calculation assume that $g = 10 \text{ m/s}^2$.

A) 5 m/s
B) 15 m/s
C) 25 m/s
D) 35 m/s
E) 45 m/s

Answer: E

$v = \sqrt{gR} = 44.7 \text{ m/s}$