1 How many cubic nanometres, nm^3, are in a cubic micrometre, μm^3?

    A 10^3 **B** 10^6 **C** 10^9 **D** 10^{12}

2 The maximum theoretical power P of a wind turbine is given by the equation
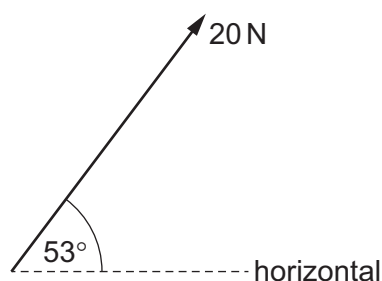
$$P = k\rho Av^n$$

where ρ is the density of air, A is the area swept by the turbine blades, v is the speed of the air and k is a constant with no units.

What is the value of n?

    A 1   **B** 2   **C** 3   **D** 4

3 What is the horizontal component of the force shown?

    A 12 N   **B** 16 N   **C** 20 N   **D** 27 N

4 A school has a piece of aluminium that it uses for radioactivity experiments. Its thickness is marked as 3.2 mm. A student decides to check this value. He has vernier calipers which give measurements to 0.1 mm and a micrometer which gives measurements to 0.01 mm.

Which statement **must** be correct?

    A The micrometer gives a more accurate measurement.

    B The micrometer gives a more precise measurement.

    C The vernier calipers give a more accurate measurement.

    D The vernier calipers give a more precise measurement.