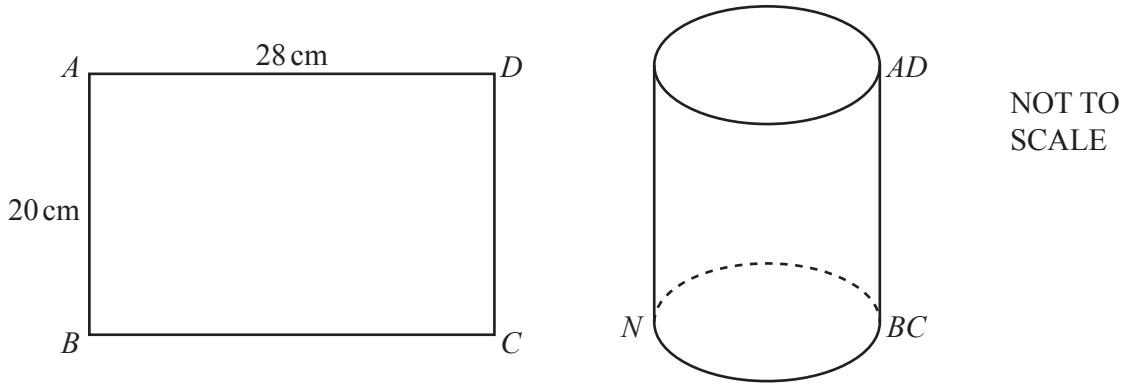
11 (a)



A rectangular sheet of paper $ABCD$ is made into an open cylinder with the edge AB meeting the edge DC.
$AD = 28$ cm and $AB = 20$ cm.

(i) Show that the radius of the cylinder is 4.46 cm, correct to 3 significant figures.

[2]

(ii) Calculate the volume of the cylinder.

..... cm^3 [2]

(iii) N is a point on the base of the cylinder, such that BN is a diameter.

Calculate the angle between AN and the base of the cylinder.

..... [3]

(b) The volume of a solid cone is $310\,\text{cm}^3$.
The height of the cone is twice the radius of its base.

Calculate the slant height of the cone.

[The volume, V, of a cone with radius r and height h is $V = \frac{1}{3}\pi r^2 h$.]

..... cm [5]