

Let r be the radius of the base, and h the height of the cone in cms.

1. To find the pressure on the base when the cone stands in a vertical position with its apex upwards. The pressure on the base is then due to a column of water with circular base of radius r cms, and height h cms, and is therefore πhr^2 grams.

2. To find the pressure on the curved surface of the cone when it stands as in 1. The pressure is then upwards and equal to the difference in weight of a cylinder of the same height and base as the cone, filled with water, and of the water in the cone.

The weight of the water in the cylinder is πhr^2 grains.

The weight of the water in the cone is $\frac{1}{3} \pi hr^2$.

The pressure on the curved surface of the cone is therefore $\frac{2}{3} \pi hr^2$ grains.

3. To find the pressure on the curved surface of the cone when it stands in a vertical position with its apex downwards.

The pressure on this surface is then equal to the weight of a column of water whose base is the area of the curved surface ($\pi r \sqrt{h^2 + r^2}$ cm) and whose depth is the same as the depth of the centre of gravity of the surface of the cone. ($\frac{1}{3} h$ cm).

Therefore the pressure on the curved surface is downwards and equal to $\frac{1}{3} \pi hr \sqrt{h^2 + r^2}$ grams.

4. To find the pressure on the upper half of the curved surface of a cone when the cone lies with its axis horizontal.

The pressure is then equal to the weight of water contained in a hollow wedge of length h cm, width $2r$ cm and height r cm., (hr^2 grams) less the weight of one half of the water in the cone ($\frac{1}{2}$ of $\frac{1}{3} \pi hr^2$) grams.

Therefore the pressure equals $(hr^2 - \frac{1}{6} \pi hr^2)$ grams.
 $= hr^2 (1 - \frac{\pi}{6})$ grams.

Other problems on the cone sphere and cylinder are worked in a similar manner.

THE HALDIMAND TEACHERS' ASSOCIATION.

At the late meeting of the Haldimand Teacher's Association the Committee on Resolutions presented their report as follows:—
 Resolved.

1. (A) That in the opinion of this Association the standard of non-professional examination for the lowest grade of Public School Teachers' Certificate should be at least equivalent to that of the present Junior Leaving Examination;

(B) That the age limit for taking the professional Examination should be raised to 21 years;

(C) That Teachers' Certificates of all grades should be valid for life or good conduct;

(D) That the non-professional part of the examination should be taken in two parts, the divisions of work being along the same lines as the Junior Matriculation Examination.

2. That the Regulations of the Education Department admitting holders of Public School Leaving certificates to Form II. of the High Schools be rescinded.

3. That the present Entrance Examination should be retained, but the percentage required for pass should be raised to 40 per cent. on each subject and 60 per cent. on the total.

4. That Trustee Boards in rural sections should consist of at least five members.

5. That the Legislative Grant to Public Schools should be materially increased.

6. That permanent Boards of Examiners for Entrance to High Schools be established in order to secure uniformity in the examinations.

7. That a book of classified pro-