pared to endorse the action of the Senate in this. Any action so radical as the abolition of a part of our university system which has been in operation from the first, and the usefulness of which has been patent to so many of our ablest and most experienced men—numbers of whom have declared themselves deeply indebted at a critical time in their college course to that very system—should be undertaken with extreme caution; and if the Senate is to determine to use the money for other purposes it must only be after deciding that the other objects are better, and then only after a thorough estimate of what are likely to be the practical effects of such a course of action.

It has been freely stated by some in speaking of this question that, so long as the scholarship system or any part of it exists, the Provincial University will apply in vain for State aid. We cannot think that the Legislature is prepared to discriminate against any particular part of the administration of university affairs by the Senate, nor do we think that the Parliament of the Province has ever given the public to understand that its members are prepared to look at the matter in any such narrow spirit. It is more than likely that any reason for this assertion at the present juncture does not exist beyond the imagination of those who make it, and in any case it is difficult to understand the propriety of individuals speaking for the Legislature.

SCHOOL WORK.

MATHEMATICS.

ARCHIBALD MACMURCHY, M.A., TORONTO, EDITOR.

SOLUTIONS TO QUESTIONS IN APRIL NUMBER.

By George Ross, B.A., Math. Master, Galt Coll. Inst.

22. Prove the following construction for inscribing a pentagon in a given circle whose centre is C with an angular point at a given point A. Divide AC in the point D so that the rectangle AC, AD shall be equal to the square on CD; and divide AC produced in E so that the rectangle CD, CE shall be equal to the square on AC; then the circles described with centres D and E and radius AC shall meet the given circle in the four remaining angular points of the pentagon.

23. Assuming that the rectangle contained by the diagonals of a quadrilateral figure inscribed in a circle is equal to the sum of the rectangles contained by its opposite sides, deduce that

(1) $\sin(\alpha+\beta)=\sin\alpha\cos\beta+\cos\alpha\sin\beta$

(2) $\sin(\alpha+\beta)\sin(\beta+\gamma)=\sin\alpha\sin\gamma+\sin\beta\sin(\alpha+\beta+\gamma)$.

24. Prove that for m angles $\alpha, \beta, \gamma, \delta$,

(1) $\Sigma\sin(\alpha\pm\beta\pm\gamma\pm\delta\ldots)=2^{n-1}\sin\alpha\cos\beta\cos\gamma\cos\delta\ldots$

(2) $\Sigma\cos(\alpha\pm\beta\pm\gamma\pm\delta\ldots)=2^{n-1}\cos\alpha\cos\beta\cos\gamma\cos\delta\ldots$

where Σ implies a summation extending to all possible arrangements of the signs indicated by the $\overline{n-1}$ ambiguities.

25. A uniform circular disk, of weight nW has a heavy particle of weight W attached to a point on its rim. If the disk be suspended from a point A on its rim, B is the lowest point; and if it be suspended from B, A is the lowest point. Show that the angle subtended by AB at the centre is $2\sec^{-1}2(n+1)$.

26. A cylinder rests in equilibrium with the centre of its base on the highest point of