

QUESTION DEPARTMENT.

W. T. C. Simplify

$$16 \left(\frac{1}{5} - \frac{1}{3} + \frac{1}{5^3} - \frac{1}{5} + \frac{1}{5^5} - \frac{1}{7} + \frac{1}{5^7} + \dots \right) = \frac{4}{239}$$

$$16 \left(\frac{1}{5} - \frac{1}{3} \times \frac{1}{5^3} + \frac{1}{5} \times \frac{1}{5^5} - \frac{1}{7} \times \frac{1}{5^7} + \text{etc.} \right) = \frac{4}{239}$$

$$16 \left(\frac{1}{2} - \frac{1}{3} \times \frac{1}{2^3} + \frac{1}{5} \times \frac{1}{2^5} - \frac{1}{7} \times \frac{1}{2^7} \right) = \frac{4}{239}$$

$$16 \left(\frac{1}{2} - .0026666 + .000064 - .0000018 + \dots \right) = .016736$$

$$16 \left(\frac{1}{2} - .000064 - .0026685 \right) = .016736$$

$$3.141592$$

NOTE. The three dots near the end of the first line mean that the terms might be carried on infinitely. Thus the next terms would be $\frac{1}{9} - \frac{1}{5^9}$, next $\frac{1}{11} - \frac{1}{5^{11}}$ and so on, but these terms become of so little value that they may be neglected.

J. M. A merchant in Toronto purchased a draft on New York for \$2660, drawn at 60 days, paying \$2570.89. What was the course of exchange?

If \$2660 gives \$2570.89, \$1 would give \$.9665. The bank discount of this would be $$.9665 \times \frac{60}{360} \times 1\frac{1}{2}\%$ = \$.010009. Therefore the course of exchange is $$.9665 + $.010009 = $.976509$. . . \$.0234 per cent. $$.9765 = $.0234$. Therefore the discount was \$.0234.

G. E. S. Two cisterns of equal dimensions are filled with water, and the taps for both are opened at the same time. If the water in one will run out in 5 hours and that in the other in 4 hours, find when one cistern will have twice as much water in it as the other has. Suppose each cask to contain 20 gallons.

Then the first would lose 4 gals. per hour and the second 5 gallons.

Therefore $20 - 4x$ hours = twice $(20 - 5x$ hours.)

$$20 - 4x \text{ hours} = 40 - 10x \text{ hours}$$

$$20 = 6x \text{ hours}$$

$$3\frac{1}{3} = \text{number of hours required.}$$

NOTE.—This problem is algebraic and should not be found in a book on arithmetic unless algebra and arithmetic are treated together as they should be from the 7th or 8th grades up.

"Good order is as creditable to a teacher now as ever, but there is a difference of opinion as to what constitutes good order." The stillness of death is not good order. It is repressive and unnatural. The military precision movement is not necessarily good order. Good order is that quiet, unobtrusive, natural process of setting about work, where the pupil is not unduly restrained, yet with her freedom does not become idle, interfere with her classmates, nor annoy her teacher. S.

SCHOOL AND COLLEGE.

The Truro Normal School Alumni Association, which held no meeting for four or five years, has been resuscitated, with Dr. Hall as president and Prof. McDonald as secretary-treasurer. The next meeting will be held at the time of the meeting of the Provincial Educational Association. Three prizes or medals will be given for the best essays on a subject to be announced in our next issue. About seventy-five persons were enrolled as members.

At the recent Provincial Educational Association the various districts were represented as follows: No. 1, 40 members; No. 2, 6; No. 3, none; No. 4, 7; No. 5, 38; No. 6, 12; No. 7, 7; No. 8, 2; No. 9, 80 and No. 10 by 58; in all 250 members. The counties of Pictou, Colchester, Halifax, Cumberland and Hants were well represented.

The following are the officers of the Nova Scotia Teachers' Union recently formed: President, Inspector Maclellan; Vice-President, Inspector Craig; Secretary, Principal Kennedy; Executive Committee, Principal O'Hearn, McKean and Lay, Miss N. A. Burgoyne and Inspector Morse. The union is fortunate in having for its first president a man who is full of sympathy with the object in view and a man who was by profession a lawyer of good reputation. Those wishing to join the union or wishing information regarding it should write to the secretary, W. F. Kennedy, Principal of Halifax Academy.

The Toronto School Board has taken a decided stand on the question of corporal punishment. It has decided that idleness and disobedience shall no longer be tolerated in the public schools in as far as corporal punishment shall be a corrective, and to that end has furnished each teacher with an implement with which to inflict it, suggesting at the same time how it shall be given.

Miss Maggie C. Donovan, teacher at Coldbrook, St. John Co., has by means of a school concert supplied her school with a globe, dictionary and other needful apparatus. Much credit is due the teacher for her energy in the matter.

A neat and attractive school house replaces the one burnt a year ago at Mohannas, Charlotte Co.

The new house at LeTete, Charlotte Co., is ready for occupation.

Money has been voted to build a new house at Richardsonville, Deer Island.