

Then from (1) by substitution

$$a^2 y^2 - y^2 + 2ay^2 = a^2 - 1 - 2a$$

$$y^2 = \frac{a^2 - 1 - 2a}{a^2 - 1 - 2a}$$

$$y = 1$$

$$\therefore x = a$$

$$(3) \quad 4x^2 + y^2 + 2(2x + y) = 6$$

$$4xy(xy + 1) = 3$$

SOLUTION.

$$\text{From (2) } x^2 y^2 + xy = \frac{1}{4}$$

$$\text{Then by quadratics } xy = \frac{1}{4}$$

$$\therefore y = \frac{1}{2x}$$

Substituting in (1) and transposing we have

$$16x^4 + 16x^3 - 24x^2 + 4x + 1 = 0$$

Factoring (4), $16x^2 + 32x + 4$ and $x^2 - x + \frac{1}{4}$

Either of these factors by quadratics will give $x = \frac{1}{2}$.

Substituting this value in (1) or (2) we get $y = 1$.

NOTE.—There are, of course, several other values of x and y .

M. McN.—Please prove the following: If the circle inscribed in a triangle ABC touch BC in D, AB in F, and AC in G, the circles inscribed in ABD and ACD will touch each other.

Let the circle in ABD touch AD in M, and the circle in ADC touch AD in N, and AC in H.

$$\text{Then } 2AN = AC + AD - HC - ND \\ = AC + AD - DC.$$

$$\text{Also } 2AM = AB + AD - BD$$

$$\therefore 2AN - 2AM = (AC - DC) - (AB - BD) \\ = AG - AF.$$

$$\text{But } AG = AF \therefore AN = AM.$$

That is the points M and N coincide.

A correspondent asks the following question: If a teacher loses a few days in a term, how should it be deducted from district salary?

The trustees are required to pay the teacher in the same way that the government money is paid. There are so many *teaching days* in a term, and whatever number of these the school is in session, for that number she is entitled to receive pay. The holidays are not counted in and have nothing to do with it. Teachers are also entitled to receive pay as for teaching days for the sessions of County or Provincial Institutes if they give the trustees proper notice of their intention to attend. If the teacher is debarred from attending the Institute by reason of bad weather, it is very doubtful whether he is entitled to pay. It may be said here that days expected to be lost in the future cannot be made up beforehand.

SCHOOL AND COLLEGE.

A very successful school concert was held in the superior school, Havelock, N. B., on the 23rd ult., to raise money to purchase a school flag. The concert was under the direction of Mr. A. C. M. Lawson, the principal, assisted by Miss Odessa Price, teacher of the primary department. Sufficient was realized to purchase a flag, besides some chemicals and other apparatus in which Mr. Lawson had already made a beginning, having purchased last winter an outfit for conducting experiments in chemistry.

Inspector Meagher has recently visited the Woodstock schools. He speaks in complimentary terms of the condition in which he found them.

The teacher of South Bay, St. John County, writing of a recent school entertainment, says, "We had a very fine evening and many of the residents of the district were present as well as a number of my friends from the city. We realized the sum of \$25.02. I bought a globe which cost \$19.00 and a map of South America. I think we have one of the finest globes in the county. The secretary is making a stand on rollers for it. It will have a cover similar to that of a sewing machine. I have organized a sewing circle among my girls for the purpose of getting a school library."

Teachers in New Brunswick are reported very scarce.

Miss Mary Moseley, of the Dartmouth schools, has been appointed to Morris street school, Halifax. In addition to being a good teacher, she is a young lady of very considerable literary ability. Four years ago she won the N. S. A. A. prize of \$25 for the best essay on the Duty of the State in Supporting High Schools.

Prof. Lee Russell, of the manual training school, Halifax, has accepted an appointment to the normal school, Truro, at a salary of \$1,200. In addition to Sloyd, he will teach physics and chemistry.

Mr. Harvey, for the last five years principal of the Victoria School of Art and Design, Halifax, has resigned his position in order to devote himself entirely to his art. He has been succeeded by Mr. O. Dodge, a graduate of Yale University Art Department and a life member of the Art Students' League of New York. Mr. Dodge has already impressed his pupils with his ability both as a teacher and an artist.

At Sydney, Cape Breton, nineteen passed the examination for the Junior Tonic sol-fa certificate, six of these children being in the common school. The following passed the examination for the elementary certificate: Mary Hanrahan, Maggie Mughah, Maggie A. McDonald, Cella Gillis, Euphemia Currie, Emily McKinnon, Ion G. McKinnon, Norman McDonald, Murdoch J. McLean, Charles McIntosh, Murdoch Buchanan, Emily Hill, Nettie Lurchell, Blanche O'Neil. Maggie A. McDonald, Intermediate.

Mr. Standish Carson, of Seal Cove, Grand Manan, and Miss Patience Doughty, of Fair Haven, Deer Island, Charlotte Co., have procured flags for their schools.

A meeting of the senate of the university was held in Fredericton on March 28th last.