

P. J. B.—A person invests \$6477 in the 6 per cent. Dominion of Canada stock at $101\frac{1}{4}$, and when it has risen to 106 he sells out and invests the proceeds in a $4\frac{1}{4}$ per cent. stock at 70. Find the gain or loss in income?

He would receive of Dom. stock $\$ \frac{6477}{1.0125}$

Income from this, $\$ \frac{6477 \times .06}{1.0125}$

He sells Dom. stock for $\$ \frac{6477 \times 1.06}{1.0125}$

and purchases $4\frac{1}{4}$ stock $= \$ \frac{6477 \times 1.06}{1.0125 \times .70}$

Income from this is $\$ \frac{6477 \times 1.06 \times .04\frac{1}{4}}{1.0125 \times .70}$

The difference of income will therefore be about \$27.87 in favor of the change.

2. A merchant sold an article at a certain per cent. profit. If the cost had been 15 per cent. less his profit would have been 30 per cent. more; what was his gain per cent.

This exercise may be solved arithmetically, but the algebraic solution is more appropriate.

Let x = rate of gain, and let \$100 be the cost.

Then $(x + 30) 85 = 15 + 100x$

$x = .70 \therefore$ the gain was 70 per cent.

3. A, B and C mow a field for \$12. A mows as much as B and C, lacking 5 acres; and B as much as A and C, lacking 10 acres. If A receives \$5, how much should B and C receive?

Let A mow x acres,

B " y "
C " z "

Then $x = y + z - 5$

$y = x + z - 10$

Adding, $2z = 15$

$z = 7\frac{1}{2}$

Substituting in (1) $x = y + 2\frac{1}{2}$

But A receives $\frac{5}{12}$ of the pay.

Therefore $x = \frac{5x}{12} + \frac{5y}{12} + \frac{5 \times 7\frac{1}{2}}{12}$

$14x = 10y + 75$

Multiplying (5) by 14, $14x = 14y + 35$

Therefore $y = 10$ and $x = 12\frac{1}{2}$

Therefore B receives \$4 and C \$3.

4. Hamblin Smith's Arithmetic, page 74, Ex 2.

$3\frac{1}{2} - 2\frac{2}{3} + \frac{1}{3}$ of $2\frac{1}{3} - 1\frac{1}{4} = \frac{2}{3} + \frac{3}{5} - 1\frac{1}{4}$

$= \frac{3}{5} - \frac{2}{5}$
 $= \frac{1}{5}$

And $\frac{4}{21} + \frac{1}{6} - \frac{5}{132} = \frac{104}{546} - \frac{21}{546} + \frac{165}{546}$

$\frac{124}{546} - \frac{21}{546} = \frac{103}{546}$

$\frac{124}{546} - \frac{104}{546} = \frac{20}{546}$

Also $\frac{21}{546} - \frac{13}{546} = \frac{8}{546}$

C. L. A.—1. Explain the difference between subjunctive and indicative mood.

2. What is an *auxiliary* and a *notional* verb?

1. The *indicative* predicates an *actual* event past, present, or future. The *subjunctive* is used in conditional clauses to express *doubt*, or *denial*; to express what is *future and contingent*, or *past and uncertain and denied*, or what is *not actual*, but merely *thought of*. Its use is not so common as formerly.

2. An *auxiliary* verb is one which is joined to other verbs simply to express tenses, etc., while at the same time losing some of its own peculiar force. Auxiliary verbs are used instead of inflections. Notional verbs express complete predication—some *object* of thought, and not merely the *relations* of thought.

In the sentence "thou shalt not kill," "shalt" is usually classed as an auxiliary verb.

B. S.—1. There is no size prescribed by law for a play-ground.

2. The teacher has the authority to compel the pupil to remain within the school premises during school hours, and for a reasonable time thereafter.

SCHOOL AND COLLEGE.

Miss Viola Barteaux, of Leonardville, and Miss Janie Johnston, of Wilson's Beach, Charlotte County, have each raised money to provide their schools with very handsome flags.

Miss May Watters, teacher at Loch Lomond, St. John County, has by means of a school entertainment been able to supply her school-room with new furniture.

Miss Anna K. Miller, lately teacher at Bayswater, Westfield, Kings County, raised enough money to paint the school-house at that place.

Inspector Carter informs the REVIEW that every organized district in Charlotte County has maintained a school during the whole or part of the present term. Charlotte means to keep her place in the van in educational matters.

A library of sixty-four volumes has been got for the school at Sinclair Hill, Albert Co., N. B. The interior of the house has been very nicely painted.

The school-house at The Neck, Rothesay, N. B., has recently been painted. Considerable apparatus has been procured. Miss Laura E. Parlee is the teacher.

Mr. N. W. Brown, B. A., principal of the Hopewell Cape school, N. B., has been most successful in effecting improvements in the school-house and premises of that place. The primary department is now established in new and pleasant quarters. Much new apparatus has been got for Mr. Brown's room.