

Correct solutions have been received as follows:

No. 50, Robert Palmer, Uxbridge; C. H. Sweetman, Bloomfield; Wm. E. Gifford, Wheatley; Charlotte Shannon, John Milroy, Christian McArthur, Jane M. McKenzie, Katie E. McIntyre, Rebecca McKenzie, North Dumfries.

No. 53, Wm. J. Jordan, Kettleby; Thos. Porter, Jarvis.

No. 50, 51, B. P. Richardson, Uxbridge; Sarah Ann Gammon, Forest; Joseph C. Mannel, Nanticoke; James D. Graham, Lakehurst; Jennie Moffatt, North Dumfries.

No. 50, 53, J. H. S., St. Thomas.

No. 50, 51, 53, T. L. Fowler, Kellerby; Geo. B. Boggs, Marsville; S. A. Thompson, Walpole; J. A. McEwan, Glensandfield; Ellen J. Campbell, St. Helens; John Stilwell, Cheapside.

No. 50, 51, 54, Thos. J. C., Bowmanville; Addie Watson, S. S. No. 1, Toronto Township; Thomas Porter, Jarvis; Robert John, Fallis; Thomas Hammond, Selkirk; Simeon Hicks, Courtland; W. A. J., Brentwood; E. Higley, Rodney; J. Doupe, Kirkton; Jas. E. Thompson, Newtonville.

No. 50, 51, 53, 54, R. D. Cameron, Lucknow; John C. Reid, Vanatter; John Anderson, Dixie; Alex. Cameron, Islay; Thomas Woodburne, Denfield; W. Bickell, Clyde; Ella C. Price, Newburg; Emma C. Henry, Selkirk; Wm. Scott, Haysville; Thos. S. Menarey, Egmondville; J. P. Boverman, Bloomfield; Thomas McCarthy, Downeyville; Jas. R. Bell, Fergus; A. Gilbert, Derwent; John S. Campbell, Allan Park; Henry Rowe, Clark Union; Edward W. Bruce, Bluevale; Thos. Cameron, Arkona; G. W. Priest, Ayr; Jno. M. Morris, Warwick; Allan F. Pringle, North Dumfries.

No. 50, 51, 52, 53, 54, Jas. W. Morgan, St. Helens; P. G. Kimmerly, Napanee; F. W. M., Port Dover; James Addison, Kirkwall; F. L. Burdon, Sutherland's Corners; Joseph Richardson, Innerkip; Wm. Moir, Fergus; No Name; C. S. Falconer, Byron; D. R. Erb, Haysville.

Trial Examination Paper.

ANSWERS TO PROBLEMS IN ARITHMETIC IN JANUARY NO. FOR SECOND CLASS CANDIDATES.

I. The difference between the interest and discount on any sum is the interest on the true discount.

$\therefore \$5.87\frac{1}{2}$ is the amount of the true discount for 2 years at 7%. $\$117\frac{1}{2}$ is the amount of \$100 at given time and rate.

II. A profit of 25% on $\frac{1}{4}$ = 10% on the whole. A loss of \$15 on the rest cancels this gain and causes a loss of 5% in addition.

$\therefore 15\%$ of cost = \$ 15,

1% " = 1,

100% or cost = 100.

No. of yards = $\$100 \div \$2.50 = 40$.

III. This question should read—"A, B, C and D do a piece of work," &c.

A does $\frac{1}{4}$, B does $\frac{1}{4}$, C and D do the rest or $\frac{1}{2}$. D does $\frac{1}{4}$ of $\frac{1}{2}$, C does $\frac{1}{4}$ of $\frac{1}{2}$ or $\frac{1}{4}$, and receives $\frac{1}{4}$ of \$16.50 or \$5.62 $\frac{1}{2}$.

IV. \$2500 worth of goods sold at 15% profit will realize \$2875. If 15c per yard will realize 115% on cost price, 17 $\frac{1}{2}$ c per yard will realize 134 $\frac{1}{2}$ %, which is 335 $\frac{1}{2}$ %. Total profit = $(2875 + 3354\frac{1}{2} - 5000) = \$1229\frac{1}{2}$.

V. Leaving out the \$1500 worth already sold, the intended profit is 16% on \$3500 or \$560.

On \$2500 he must gain \$560

On 1 " " 560

2500

On \$100 " " $\frac{560 \times 100}{2500}$ or 22 $\frac{2}{5}$ %.

VI. Fast train runs 140 miles in 7 hrs and 56 miles in 2 hours. Difference = $(140 - 56) = 84$ mls., which is the distance run by slow train in 7 hrs. \therefore rate is 12 miles per hour. Distance of station is $(23 + 12) \times 2$ or 80 miles east of London.

VII. $\frac{3}{4}$ of the mixture consists of wine. To leave only half wine we must draw off $\frac{3}{4} - \frac{1}{2}$ or $\frac{1}{4}$ of a hhd. of wine. This is $\frac{1}{4}$ of $\frac{3}{4}$ or the whole quantity of wine; hence $\frac{1}{4}$ of the whole mixture must be drawn off, which is 10 $\frac{1}{2}$ gallons.

VIII. Assuming the year to consist of 12 mos. of 30 days each.

Int. for 12 months = $6\frac{1}{2}\%$,
2 = $1\frac{1}{4}\%$.

which is exactly one cent on the dollar.

IX. 143 yards of paper cover 856 square feet.

Perimeter of room = $856 \div 11 = 76$ feet.

Breadth of room = $76 \div 6 = 13$ feet; and

Width 26 feet. Floor has an area of 26×13 sq. feet. Yards of carpet required = $26 \times 13 \div 3 = 50\frac{2}{3}$ yards.

X. Cubical diagonal² = $\sqrt{\text{Length}^2 + \text{width}^2 + \text{depth}^2}$ that is $15^2 = \sqrt{144 + 45 + \text{depth}^2}$, whence depth = $\sqrt{36}$ or 6 feet. Contents of cistern = $12 \times 3 \sqrt{5} \times 6$ cubic feet, weighing 30 tons 3 cwt. 45 lb. A cubic foot of water weighs just half of 394 $\sqrt{5}$ ounces.

We have received correct solutions from the following correspondents:

Emma C. Urmy, Selkirk, all but No. 10; W. Bickell, Clyde, all but No. 3; Thomas Hammond, Selkirk, all but No. 10; J. M. Morris, Warwick, all but Nos. 3, 10; — Moir, Fergus, all but 9, 10; W. A. Jones, Brentwood, 1, 2, 5, 6, 8; Henry W. Hoover, Selkirk, all but 4, 10; George Harrison, Selkirk, all but No. 10; Annie Wilson, Selkirk, 1, 4, 5, 6, 8; Maggie Blair, Komoka, 1, 2, 4, 5, 9.

In answers to the First Class Arithmetic Paper given in February No., the denominator of the fraction given as answer to question 7 (c) should be 3rd root of $(1387.431)^2$.

English Department.

J. G. HANDS, EDITOR, 75 CARTWRIGHT ST., LONDON.

Subscribers are cordially invited to co-operate with the Editor in making this Department as interesting as possible by freely discussing the points raised by enquiring correspondents.

Questions are invited bearing on the subjects of Grammar, English Literature, Etymology, &c.; but they must be of such a character as to be interesting to subscribers generally. Matter for this Department must be addressed to the Editor as above not later than the 15th of the month previous to that in which it is expected to appear.

Answers to queries, &c., will be inserted in the second number following that in which they appear.

Queries.

Proposed by A. Stevenson, Markham.

(a) Is there a Potential Mood, proper, in the English Verb? and—

(b) Is there any Case, proper, in English Nouns?