

# MACLEAR CO'S CANADIAN ALMANAC.

Mr. J. L. N. O'HANLEY, P. L. Surveyor, has sent Solutions of Problems 1, 2, 4, 5, 6, 8, 9, 11, 12, 13, 15, 18, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 34, 35, 37, 39, 40, 42, 43, 45, 46, 47, 49, and Geom. Probs. 2, 3, 4, 5, 6; all of which were correct except Probs. 21, 25, 35, 40, 42, 43, 45, 46, 49, and Geom. Probs. 5 and 6.

Mr. CHARLES CLARK, C. S. Teacher, has sent us Solutions of Probs. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 14, 15, 17, 18, 21, 22, 23, 24, 26, 27, 29, 30, 31, 33, 34, 35, 36, 39, 40, 43, 45, 47, 49, 50, and Geom. Probs. 2, 3, 4, 5, 6. Only Probs. 27, 43, 49, and 50 were incorrect.

Mr. JOHN NILES, Kingston, C. S. Teacher, has sent solutions of Probs. 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 18, 22, 23, 24, 25, 26, 27, 28, 31, 34, 36, 37, 38, 39, 40, 42, 43, 45, 46, 47, 49, in which only Probs. 3, 25, 27, 38, 39, 42, 43, 45, 46 and 49 were found wrong.

Mr. THOMAS GUERIN, Civil Engineer, Montreal, has forwarded to us solutions of Probs. 1, 11, 16, 27, 31, and Geom. Probs. 3 and 4, all of which are correct except Prob. 27.

Mr. THOMAS JORDAN, School Teacher, of Oxford, has furnished us with Solutions to Probs. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 29, 30, 31, 33, 34, 36, 37, 38, 39, 40, 42, 43, 45, 46, 47, 48, 49, and Geom. Probs. 2, 3, 4, 5, and 6; in which only Probs. 2, 13, 25, 27, 38, 39, 40, 42, 43, 46, 47, and Geom. Prob. 6 were solved wrongly.

Mr. JOHN O'LOANE, of Glamfou, has made solutions of Probs. 1, 3, 6, 7, 8, 9, 10, 11, 12, 15, 17, 18, 21, 22, 23, 24, 26, 27, 28, 29, 30, 31, 33, 34, 37, 38, 43, 48, 49, 50, in which Probs. 10, 38 and 42 only are incorrect.

Mr. THOMAS MAGENNIS, of St. Andrews, has furnished Solutions of Probs. 1, 8, and 39, which are correct.

Mr. HENRY W. BROWN, of Crowland, has solved Prob. 23, and Geom. Prob. 1, the latter being wrong.

Mr. JAMES DEVLIN, Teacher in Maidstone, has correctly solved Probs. 11, 12, and 40.

Mr. T. J. CHADWICK, of Gu-dph Grammar School, has sent us solutions of Probs. 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, 20, 22, 23, 24, 25, 26, 28, 34, 35, 36, 39, 43, 47, 48, and Geom. Probs. 3, 4, and 5. Of these only Probs. 14, 36, 43, and Geom. Prob. 5 are wrong.

Mr. GEORGE W. HILL, of Clarkstown, Rockland, County of N. York, has sent us solutions of Probs. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 33, 34, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, and Geom. Prob. 2, 3, 4, 5 and 6, all of which are correct.

S. H. WRIGHT.

*Note.*—It seems that no one has attempted Probs. 19 and 32. There is a short solution to the former, and we will be glad to notice solutions of it from our correspondents next year. In Prob. 26, the glass is supposed to extend over the base of the hemisphere, and the answer is given accordingly. In Geom. Prob. 2, the obliquity of the ecliptic is taken to be  $20^{\circ} 27' 32.9''$ . In Geom. Prob. 3, the *strongest* instead of the largest rectangle was intended to be printed, and the answer on page 5, is accordingly. The literal formula in answer to Prob. 16, is too tedious and complex for insertion.—S. H. W.

## Answers to the Problems in the Almanac for 1854.

Problem 1st.  $6^{\circ} 30' 45''$ , or 449.68 miles. 2nd. 2480. 3rd.  $x = \pm \sqrt{\frac{1}{2}}$  or  $\pm \frac{1}{2}$ . 4th. 1.081382587. 5th. £109 17s. 9 57-91d. 6th.  $x = 2.1293$ . 7th. 29.31 years. 8th.  $x = 3.89598$  nearly. 9th. 2189. 10th. 0.0023028568 of the whole surface, more than half. 11th.  $x = 16$  or 1. 12th.  $x = 11$  or 5, and  $y = 5$  or 11. (*Note.*  $(x^2 + y^2) \times (x - y)$  should have been  $(x^2 + y^2) \times (x + y)$ .)

13th. 676794. 14th. A. ploughs  $\frac{348611}{695556}$ , and B.  $\frac{346945}{695556}$  of it. 15th.  $x = 2$  or 8, and  $y = 2$  or  $\frac{1}{2}$ .

16th. (Ans. too long.). 17th. 59 whole circles. 18th. Jan. 16th, 1854, at noon, or 12 o'clock. 19th.  $x = 2$ , and  $y = 6$ . 20th.  $x = 20$  or  $-22$ . 21st. A ball 1.6384 inches in diameter.

22nd. 12.426 inches in diameter. 23rd. 42925. 24th. 37.4361726816 solid inches, and 6.3271265 superficial inches. 25th. 5 5-79ths per cent. 26th. 1.2057714 inches. 27th. A's part 0.499375; B's 0.500625 of the bar. 28th. 12.735 inches. 29th.  $x = 4$ ,  $y = 3$ .

(*Note.* 989535 should have been 989527.) 30th.  $x = 3\frac{1}{3}$ ,  $y = 2$ . (*Note.* To the expression  $\frac{102x}{5}$  should have been added  $+16$ .) 31st. 5724 miles. 32nd. 18.686557 solid inches, 7.33 surface inches. 33rd. A cylinder  $3\frac{1}{3}$  inches high, and 8 inches in diameter. 34th. 3,804 feet from the brightest brilliant. 35th. 1.64092 feet in diameter. 36th. 739.35 lbs. 37th. 200 lbs.

38th. 197.082 feet per second; time, 7.528 $\frac{1}{2}$  minutes; force 7283.3 tons. 39th. 65.97786 years. 40th. 20 oxen. 41st. 185.02 solid & 36.07 surf. in. 42nd. 200.36776 lbs on the longer cord, and 199.63224 lbs on the other. 43rd. 6665 feet exactly. 44th. 3.674226 inches, the sides of the hole,  $70^{\circ} 31' 44''$  the included angle, and 63.639612 solid inches, solid area. 45th. 400.4 feet per second, the velocity, 1029 $\frac{1}{2}$  feet, the height; and 4907 feet distance. 46th.

119  $\frac{2016067}{14538107}$  lbs. on one stake, and 80  $\frac{12522040}{14538107}$  lbs on the other. 47th. The point will be 2.8633536 feet, or 62.8633536 feet from A. in the direction of B. 48th. A. in 13 $\frac{1}{2}$  days, B. in 14 14-29 days, C. in 11 1-19 days, and D. in 70 days. All working together can do it in four days. 49th. 0.16347 of an inch too long. 50th. 1.5118579 times more weight.

GEOMETRICAL PROBLEMS.—No. 1. 530.4. No. 2. Torrid zone, 50105553920 acres; both Temperate zones, 65354992896 acres; and both Frigid zones together 10403856774.4 acres. Total whole earth 125864103590 acres. No. 3. 5.77 $\frac{1}{2}$  feet by 8.16 $\frac{1}{2}$  feet. (Should have been *strongest* instead of the largest rectangle.) No. 4. 6 $\frac{2}{3}$  diameter. No. 5. 13.85 inches square. No. 6. 2.4853 feet square.

h. m. 5 46 5 1 4 48 4 30 4 25 4 21 4 16 4 13 4 11 4 8 4 3 3 58 3 55 3 50

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