



# *Under the Home*

## *Fifth Grade Math Select Answers Key*

**Ray's New Intellectual Arithmetic (Lessons 20-68)  
Ray's New Practical Arithmetic (Articles 83-169)  
Ray's New Test Examples in Arithmetic (Articles 87-169)**

*Learn from the Masters*

**Lesson 1 – Practical 83**

- 1) 1, 3, 9, 27      2) 5, 10, 15, 20, 25      3) 2, 3, 5, 7, 11, 17, 23      4) 4, 6, 10, 16, 21  
5) 6      6) 9      7) 24      8) 36

**Lesson 2 – Practical 84**

1. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31  
2. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

**Lesson 3 – Practical 85**

- 1) 4, 2) 3, 3) 42, 4) 9, 5) 9, 6) 28, 7) 7, 8) 9, 9) 18, 10) 6, 11) 8, 12) 10, 13) 12, 14) 14, 15) 16, 16) 42, 17) 70, 18) 66

**Lesson 4 – Practical 86**

1. 37, 41, 43, 47, 53, 59, 61  
2. a) 2 and 3, b) 2 and 5, c) 2 and 3, d) 2 and 7, e) 2 and 5, f) 3 and 7, g) 2 and 11, h) 2, 3, and 7, i) 2 and 11

**Lesson 5 – Practical 87**

See lesson for answers.

**Lesson 6 – Test 87**

- 1) 3, 17. 2) 2, 2, 13. 3) 2, 31. 4) 3, 3, 7. 5) 2, 2, 2, 3, 3. 6) 3, 5, 5. 7) 2, 2, 19. 8) 2, 2, 2, 3. 5. 9) 2, 2, 3, 11. 10) 2, 2, 2, 3, 7. 11) 2, 2-7, 7. 12) 2, 3, 3, 11. 13) 2,2,3,17. 14) 3,3,23. 15) 2,2,3,3,7. 16) 3,11,17. 17) 2, 3, 3, 7, 7. 18) 2, 2, 3, 3, 23. 19) 2, 11, 11, 11. 20) 3, 3, 7. 7, 7. 21) 2, 2, 3, 3, 11, 11.

**Lesson 7 – Practical 88**

See lesson for answers.

**Lesson 8 – Test 88**

- 1) 2, 2, 5, 2) 2, 3, 5. 3) 2, 2, 2, 5. 4) 3, 3, 5. 5) 2, 3, 7. 6) 2, 2, 3, 3, 3. 7) 2, 3, 3, 3. 8) 2, 11. 9) 3, 7. 10) 5, 7. 11) 3, 11. 12) 2, 2, 3. 13) 13. 14) 2, 2, 3. 15) 2, 2, 2. 16) 3, 5. 17) 2, 2, 2, 3. 18) 13. 19) 2, 7. 20) 11. 21) 7. 22) 2, 3.

**Lesson 9 – Practical 89**

See lesson for answers.

**Lesson 10 – Test 89**

- 1) 12. 2) 10. 3) 9. 4) 7. 5) 4. 6) 78. 7) 49. 8) 11. 9) 9. 10) 82. 11) 49. 12) 21. 13) 144. 14) 144. 15) 37. 16) 27. 17) 14. 18) 20. 19) 36. 20) 27. 21) 7. 22) 17. 23) 9. 24) 15. 25) 3. 26) 9. 27) 2.

**Lesson 11 – Practical 90**

See lesson for answers.

**Lesson 12 – Test 90**

- 1) 240. 2) 720. 3) 240. 4) 400. 5) 3024. 6) 840. 7) 1980. 8) 4620. 9) 7920. 10) 720. 11) 720. 12) 360. 13) 3024. 14) 14762. 15) 4199. 16) 4225. 17) 5145. 18) 2250. 19) 600. 20) 1848. 21) 25025. 22) 2288. 23) 144. 24) 2880. 25) 702. 26) 2304. 27) 3960. 28) 16200. 29) 30870. 30) 8610.

**Lesson 13 – Practical 91**

See lesson for answers.

**Lesson 14 – Test 91**

1) 9 times. 2) 3. 3) 24 times. 4) 6 times. 5) 15. 6) 54. 7) 24. 8) 32. 9) 24. 10) 16. 11) 36. 12) 102. 13) 360. 14) 120. 15) 18 (hundred).

**Lesson 16 – Intellectual 20**

1) 4, 6, 8, 10, 12, 14, 16, 18, 20; 2) 6, 9, 12, 15, 18, 21, 24, 27, 30; 3) 8, 12, 16, 20, 24, 28, 32, 36, 40; 4) 10, 15, 20, 25, 30, 35, 40, 45, 50; 5) 12, 18, 24, 30, 36, 42, 48, 54, 60; 6) 14, 21, 28, 35, 42, 49, 56, 63, 70; 7) 16, 24, 32, 40, 48, 56, 64, 72, 80; 8) 18, 27, 36, 45, 54, 63, 72, 81, 90; 9) 9, 15, 21, 27; 10) 20, 40, 15; 11) 66, 11, 44, 99

**Lesson 17 – Practical 93**

1)  $\frac{1}{2}$ , 2)  $\frac{2}{2}$  or 1, 3)  $\frac{1}{3}$ , 4)  $\frac{2}{3}$ , 5)  $\frac{1}{4}$ , 6)  $\frac{2}{4}$  or  $\frac{1}{2}$ , 7)  $\frac{3}{4}$ , 8)  $\frac{4}{4}$  or 1, 9)  $\frac{1}{5}$ , 10)  $\frac{2}{5}$ , 11)  $\frac{3}{5}$ , 12)  $\frac{4}{5}$ , 13)  $\frac{5}{5}$  or 1, 16)  $\frac{5}{6}$ , 17)  $\frac{6}{6}$  or 1, 18)  $\frac{1}{8}$ , 19)  $\frac{2}{8}$  or  $\frac{1}{4}$ , 20)  $\frac{7}{8}$ , 21)  $\frac{8}{8}$  or 1

**Lesson 18 – Practical 94**

1) a. 1, b. 1, c. 1, d. 2, e. 3, f. 7  
2) a. 2, b. 9, c. 7, d. 3, e. 5, f. 8

**Lesson 19 – Practical 95**

1)  $>$ , 2)  $>$ , 3)  $<$ , 4)  $>$ , 5)  $>$ , 6)  $>$ , 7)  $<$ , 8)  $>$ , 9)  $<$ , 10)  $<$

**Lesson 20 – Practical 96**

1)  $\frac{1}{2}$ , 2)  $\frac{2}{3}$ , 3)  $\frac{3}{5}$ , 4)  $\frac{7}{8}$ , 5)  $\frac{1}{8}$ , 6)  $\frac{2}{9}$ , 7)  $\frac{6}{6}$  or 1, 8)  $\frac{4}{9}$ , 9)  $\frac{5}{6}$ , 10)  $\frac{8}{12}$

**Lesson 21 – Practical 97**

1) one, two; 2) one, three; 3) one, four; 4) one, five; 5) one, seven; 6) one, eight; 7) one, nine; 8) 2, 9) 3, 10) 4, 11) 5, 12) 8, 13) 10, 14) 21, 15) 101

**Lesson 22 – Practical 98**

1)  $<$ , 2)  $<$ , 3)  $>$ , 4)  $>$ , 5)  $=$ , 6)  $=$ , 7) proper, 8) proper, 9) improper, 10) improper, 11) mixed, 12) mixed

**Lesson 23 – Intellectual 21**

1) a.  $\frac{2}{3}$ , b.  $\frac{4}{5}$ , c.  $\frac{6}{7}$ , d.  $\frac{8}{9}$ , e.  $\frac{1}{10}$ , f.  $\frac{3}{10}$ , g.  $\frac{9}{10}$ , h.  $\frac{7}{11}$ , i.  $\frac{5}{12}$ , j.  $\frac{7}{13}$ , k.  $\frac{9}{14}$ , l.  $\frac{13}{15}$ , m.  $\frac{1}{16}$ , n.  $\frac{2}{17}$ , o.  $\frac{5}{18}$ , p.  $\frac{6}{19}$ , q.  $\frac{17}{20}$ , r.  $\frac{27}{31}$ , s.  $\frac{34}{43}$ , t.  $\frac{29}{56}$ , u.  $\frac{42}{67}$ , v.  $\frac{57}{71}$ , w.  $\frac{69}{82}$ , x.  $\frac{71}{98}$ , y.  $\frac{85}{123}$

**Lesson 24 – Intellectual 22**

1) 1 cent, 2) 1 cent, 3) \$4, 4) 2, 5) 6 cents, 6) a. \$4, b. \$6, c. \$8, 7) 10 cents, 8) 6, 9) 15, 10) a. 6, b. 12, c. 20, 11) a. 4, b. 9, c. 16, d. 25, e. 37, 12) a. 6, b. 15, c. 28, 13) a. 2, b. 8, c. 15, d. 28, e. 40, 14) a. 8, b. 14, c. 27, 15) a. 2, b. 6, c. 12, d. 20, e. 30, f. 42, g. 56, 16) a. 10, b. 21, c. 44, 17) 2 cents, 18) \$3, 19) 10 cents, 20) \$18, 21) 50 cents, 22) 45 cents, 23) \$70

**Lesson 25 – Intellectual 23**

1)  $\frac{1}{2}$ , 2)  $\frac{1}{3}$ , 3)  $\frac{2}{3}$ , 4)  $\frac{3}{4}$ , 5) a.  $\frac{2}{5}$ , b.  $\frac{3}{5}$ , c.  $\frac{4}{5}$ , 6)  $\frac{5}{6}$ , 7)  $\frac{4}{7}$ , 8)  $\frac{7}{10}$ , 9)  $\frac{5}{8}$ , 10)  $\frac{5}{7}$ , 11) a.  $\frac{3}{8}$ , b.  $\frac{3}{10}$ , c.  $\frac{3}{11}$ , d.  $\frac{3}{20}$ , 12) a.  $\frac{4}{9}$ , b.  $\frac{4}{11}$ , c.  $\frac{4}{15}$ , d.  $\frac{4}{25}$ , 13) a.  $\frac{5}{8}$ , b.  $\frac{5}{9}$ , c.  $\frac{5}{12}$ , d.  $\frac{5}{16}$ , 14) a.  $\frac{2}{15}$ , b.  $\frac{7}{15}$ , c.  $\frac{8}{15}$ ,

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d.  $11/15$ , e.  $13/15$ , 15) a.  $3/20$ , b.  $7/20$ , c.  $11/20$ , d.  $13/20$ , e.  $17/20$ , 16)  $18/23$ , 17)  $24/35$ , 18)  $14/19$ , 19)  $2/3$ , 20)  $9/20$ , 21)  $4/9$ , 22)  $6/25$ , 23)  $8/21$ , 24)  $27/35$

**Lesson 26 – Intellectual 24**

1) 2 cents, 2) 6 cents, 3) 9 cents, 4) \$12, 5) 25 cents, 6) 15 cents, 7) 42 cents, 8) 21, 9) a. 27, b. 33, 10) a. 16, b. 20, c. 28, d. 32, e. 40, f. 44, 11) a. 25, b. 35, c. 45, d. 55, 12) a. 36, b. 42, c. 48, d. 54, e. 66, f. 72, 13) a. 49, b. 77, 14) a. 64, b. 72, c. 80, 15) a. 81, b. 99, 16) 100, 17) 9 cents, 18) 16 years, 19) 25, 20) 32, 21) 35, 22) 20, 23) 55, 24) 77, 25) 36

**Lesson 27 – Intellectual 25**

1) Each boy will receive  $1/2$  of 3 apples, which is  $3/2 = 1\ 1/2$  apples  
4) One yard will cost  $1/3$  of \$5, which is \$1  $2/3$   
6)  $1/5$  of 6 is  $6/5 = 1\ 1/5$   
13) I can buy as many apples as 2 cents are contained times in 5 cents, which are  $5/2 = 2\ 1/2$  apples  
19) As many as 2 is contained times in 13, which are  $13/2 = 6\ 1/2$

**Lesson 28 – Intellectual 26**

1) In 1 there are  $2/3$ ; then, in 2 there are 2 times  $2/2 = 4/2$ ;  $4/2 + 1/2 = 5/2$   
4) a. Since there are  $4/4$  in 1, in 3 there are 3 times  $4/4$ , which is  $12/4$ ; and  $12/4 + 1/4 = 13/4$ , b.  $19/4$ , c.  $21/4$ , d.  $27/4$

**Lesson 29 – Practical 99**

Compound fractions are b, c, d, e, g, and k.

**Lesson 30 – Practical 100**

Complex fractions are a, c, g, i, k, and l.

**Lesson 31 – Practical 101**

1)  $6/7$ , 2)  $15/5$  or 3, 3)  $4/3$ , 4)  $6/5$ , 5)  $2/21$ , 6)  $1/10$ , 7)  $1/9$ , 8)  $1/30$ , 9)  $2/7$ , 10)  $3/8$ , 11)  $4/9$ , 12)  $5/11$ , 13)  $2/7$ , 14)  $6/10$  or  $3/5$ , 15)  $4/9$ , 16)  $5/11$

**Lesson 32 – Practical 102**

1)  $6/2$ , 2)  $8/2$ , 3)  $6/3$ , 4)  $12/4$ , 5)  $20/5$ , 6)  $60/10$ , 7)  $96/12$ , 8)  $28/7$ , 9)  $72/9$ , 10)  $247/13$ , 11)  $500/20$ , 12)  $851/23$

**Lesson 33 – Practical 103**

1)  $98/7$ , 2)  $253/11$ , 3)  $161/23$ , 4)  $1134/18$ , 5)  $810/9$ , 6)  $992/32$ , 7)  $168/56$ , 8)  $208/8$ , 9)  $2835/9$ , 10)  $2400/12$ , 11)  $666/18$ , 12)  $1360/40$ , 13)  $280/20$ , 14)  $351/13$ , 15)  $496/16$ , 16)  $1474/22$ , 17)  $1710/90$ , 18)  $2349/29$

**Lesson 34 – Practical 104**

1)  $7/2$ , 2)  $9/2$ , 3)  $7/3$ , 4)  $8/3$ , 5)  $23/4$ , 6)  $35/4$ , 7)  $63/5$ , 8)  $95/6$ , 9)  $637/24$ , 10)  $182/55$ , 11)  $373/8$ , 12)  $12360/583$ , 13)  $1999/1000$ , 14)  $1000/71$ , 15)  $1111/111$

**Lesson 35 – Test 104**

1)  $127/8$ , 2)  $138/7$ , 3)  $892/9$ , 4)  $731/10$ , 5)  $548/15$ , 6)  $767/18$ , 7)  $1234/7$ , 8)  $362/19$ , 9)  $521/18$ , 10)  $995/22$ , 11)  $5337/73$ , 12)  $2903/100$ , 13)  $3000/11$ , 14)  $10696/27$ , 15)  $7871/14$ , 16)  $10001/100$ , 17)  $10923/16$ , 18)  $5303/41$ , 19)  $3323/111$ , 20)  $400/19$ , 21)  $7300/99$

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**Lesson 36 – Practical 105**

1) 3, 2)  $2\frac{1}{4}$ , 3) 2, 4) 3, 5)  $\$3\frac{3}{4}$ , 6)  $\$3\frac{2}{5}$ , 7)  $2\frac{5}{7}$  bu., 8)  $\$2\frac{3}{10}$ , 9)  $8\frac{1}{3}$  oz., 10)  $\$13\frac{1}{4}$ , 11)  $18\frac{3}{4}$ , 12)  $15\frac{5}{8}$ , 13)  $25\frac{11}{24}$ , 14) 40, 15) 31, 16)  $14\frac{3}{12}$ , 17)  $46\frac{3}{11}$ , 18)  $21\frac{179}{298}$ , 19)  $60\frac{36}{125}$ , 20) 199, 21)  $13\frac{12}{101}$

**Lesson 37 – Test 105**

1)  $76\frac{1}{6}$ , 2) 46, 3) 177, 4)  $123\frac{9}{10}$ , 5)  $362\frac{4}{13}$ , 6)  $174\frac{7}{15}$ , 7)  $243\frac{1}{19}$ , 8)  $145\frac{3}{17}$ , 9)  $163\frac{4}{23}$ , 10)  $33\frac{13}{22}$ , 11)  $403\frac{5}{14}$ , 12)  $152\frac{21}{26}$ , 13) 230, 14)  $141\frac{25}{33}$ , 15) 39, 16)  $98\frac{76}{100}$ , 17) 81, 18)  $82\frac{4}{15}$ , 19) 218, 20)  $536\frac{17}{23}$ , 21)  $48\frac{22}{97}$

**Lesson 38 – Practical 106**

1)  $24/30$ , 2)  $2/4$ , 3)  $4/6$ , 4)  $9/12$ , 5)  $20/24$ , 6)  $20/28$ , 7)  $16/84$ , 8)  $63/72$ , 9)  $36/60$ , 10)  $90/100$ , 11)  $324/720$ , 12)  $1872/2016$ , 13)  $990/1935$ , 14)  $6930/8118$ , 15)  $4832/5134$ , 16)  $22176/23328$ , 17)  $1573/2541$

**Lesson 39 – Test 106**

1)  $12/33$ , 2)  $25/60$ , 3)  $15/40$ , 4)  $28/35$ , 5)  $85/100$ , 6)  $112/126$ , 7)  $80/105$ , 8)  $144/156$ , 9)  $153/171$ , 10)  $238/280$ , 11)  $210/345$ , 12)  $204/336$ , 13)  $240/464$ , 14)  $221/416$ , 15)  $972/1368$ , 16)  $7128/7744$ , 17)  $4161/4560$ , 18)  $221/3604$ , 19)  $203/1911$ , 20)  $6086/6698$

**Lesson 40 – Practical 107**

1)  $4/5$ , 2)  $3/5$ , 3)  $2/3$ , 4)  $2/3$ , 5)  $2/3$ , 6)  $2/5$ , 7)  $3/5$ , 8)  $6/7$ , 9)  $12/25$ , 10)  $7/11$ , 11)  $13/14$ , 12)  $41/61$ , 13)  $9/11$ , 14)  $7/18$ , 15)  $9/23$ , 16)  $17/29$ , 17)  $5/11$ , 18)  $4/71$ , 19)  $47/191$ , 20)  $431/489$

**Lesson 41 – Test 107**

1)  $6/7$ , 2)  $2/3$ , 3)  $27/47$ , 4)  $81/143$ , 5)  $11/27$ , 6)  $37/90$ , 7)  $11/12$ , 8)  $16/21$ , 9)  $25/47$ , 10)  $2/7$ , 11)  $41/43$ , 12)  $37/50$ , 13)  $96/121$ , 14)  $35/44$ , 15)  $9/17$ , 16)  $4/5$ , 17)  $7/11$ , 18)  $2/3$ , 19)  $13/27$ , 20)  $25/64$ , 21)  $4001/5001$

**Lesson 42 – Intellectual 27**

1)  $1/2$ , 2)  $1/3$ , 3)  $1/2$ , 4)  $2/3$ , 5)  $1/2$

**Lesson 43 – Intellectual 28**

1)  $2/4$ , 8)  $4/6$ , 10)  $6/8$ , 9)  $1/2$

**Lesson 44 – Practical 108**

See lesson for answers.

Lesson 45 – Test 108

- Article 108.**— 1.  $\frac{40}{80}, \frac{15}{80}, \frac{36}{80}$ . 2.  $\frac{72}{90}, \frac{75}{90}, \frac{80}{90}$ . 3.  $\frac{21}{56}, \frac{42}{56}, \frac{24}{56}$ .  
 4.  $\frac{40}{90}, \frac{63}{90}, \frac{48}{90}$ . 5.  $\frac{24}{80}, \frac{18}{80}, \frac{16}{80}, \frac{27}{80}$ . 6.  $\frac{42}{48}, \frac{28}{48}, \frac{21}{48}, \frac{14}{48}$ . 7.  $\frac{108}{120}, \frac{70}{120},$   
 $\frac{54}{120}, \frac{35}{120}$ . 8.  $\frac{32}{120}, \frac{25}{120}, \frac{28}{120}, \frac{27}{120}$ . 9.  $\frac{156}{240}, \frac{78}{240}, \frac{52}{240}, \frac{39}{240}$ . 10.  $\frac{1287}{2002},$   
 $\frac{819}{2002}, \frac{693}{2002}$ . 11.  $\frac{56}{72}, \frac{60}{72}, \frac{54}{72}, \frac{27}{72}, \frac{30}{72}$ . 12.  $\frac{12}{100}, \frac{35}{100}, \frac{90}{100}, \frac{22}{100}$ .  
 13.  $\frac{27}{36}, \frac{6}{36}, \frac{28}{36}, \frac{33}{36}, \frac{12}{36}$ . 14.  $\frac{528}{1056}, \frac{88}{1056}, \frac{48}{1056}, \frac{33}{1056}$ . 15.  $\frac{36}{120}, \frac{66}{120},$   
 $\frac{50}{120}, \frac{105}{120}$ . 16.  $\frac{12}{144}, \frac{64}{144}, \frac{45}{144}, \frac{104}{144}$ . 17.  $\frac{24}{90}, \frac{25}{90}, \frac{63}{90}, \frac{15}{90}$ . 18.  $\frac{192}{720},$   
 $\frac{200}{720}, \frac{504}{720}, \frac{45}{720}$ . 19.  $\frac{378}{1008}, \frac{280}{1008}, \frac{324}{1008}, \frac{147}{1008}$ . 20.  $\frac{22}{30}, \frac{21}{30}, \frac{20}{30}, \frac{25}{30}$ .  
 21.  $\frac{1540}{8930}, \frac{2079}{8930}, \frac{1980}{8930}, \frac{1890}{8930}$ . 22.  $\frac{90}{144}, \frac{112}{144}, \frac{63}{144}, \frac{56}{144}$ . 23.  $\frac{24}{132}, \frac{8}{132},$   
 $\frac{18}{132}, \frac{9}{132}$ . 24.  $\frac{20}{12}, \frac{21}{12}, \frac{22}{12}, \frac{19}{12}$ . 25.  $\frac{168}{80}, \frac{28}{80}, \frac{198}{80}, \frac{33}{80}$ . 26.  $\frac{132}{144},$   
 $\frac{135}{144}, \frac{136}{144}, \frac{138}{144}$ . 27.  $\frac{360}{830}, \frac{315}{830}, \frac{280}{830}, \frac{252}{830}$ . 28.  $\frac{117}{144}, \frac{288}{144}, \frac{78}{144}, \frac{52}{144}, \frac{39}{144}$ .  
 29.  $\frac{1071}{1280}, \frac{1080}{1280}, \frac{810}{1280}, \frac{1190}{1280}, \frac{1155}{1280}$ . 30.  $\frac{32}{72}, \frac{27}{72}, \frac{420}{72}, \frac{126}{72}, \frac{642}{72}$ .

Lesson 46 – Intellectual 29

- 1)  $\frac{2}{3} = \frac{8}{12}$  and  $\frac{3}{4} = \frac{9}{12}$ ; 4)  $\frac{2}{3} = \frac{10}{15}$ ,  $\frac{2}{5} = \frac{6}{15}$ ; 13)  $\frac{3}{4} = \frac{9}{12}$ ,  $\frac{5}{6} = \frac{10}{12}$

Lesson 47 – Intellectual 30

- 1)  $\frac{3}{4}$  melons, 2) \$1  $\frac{1}{4}$ , 7)  $3 \frac{7}{12}$  yards, 15)  $8 \frac{1}{2}$

Lesson 48 – Intellectual 31

- 1)  $\frac{1}{6}$ , 3)  $\frac{1}{6}$ , 6)  $\frac{7}{12}$ , 13)  $2 \frac{1}{2}$

Lesson 49 – Intellectual 32

- 1)  $\frac{5}{12}$  of a quart, 14)  $\frac{1}{6}$

Lesson 50 – Intellectual 33

- 1)  $1 \frac{1}{2}$  oranges, 2)  $2 \frac{1}{2}$  pecks, 5)  $2 \frac{2}{3}$

Lesson 51 – Practical 109-110

See lesson for answers.

Lesson 52 – Test 110

- Article 110.**— 1.  $2\frac{2}{3}$ . 2.  $2\frac{2}{3}$ . 3.  $2\frac{5}{12}$ . 4.  $2\frac{1}{2}$ . 5.  $1\frac{1}{4}$ . 6.  $\frac{4}{7}$ .  
 7.  $2\frac{13}{20}$ . 8.  $1\frac{29}{72}$ . 9.  $1\frac{1}{2}$ . 10.  $1\frac{15}{16}$ . 11.  $2\frac{7}{4}$ . 12.  $2\frac{1}{2}$ . 13.  $1\frac{17}{80}$ .  
 14.  $2\frac{2}{45}$ .

Lesson 53 – Practical 111

See lesson for answers.

Lesson 54 – Test 111

- Article III.**—1.  $1\frac{9}{16}$ . 2.  $2\frac{5}{8}$ . 3.  $2\frac{5}{8}$ . 4.  $2\frac{8}{15}$ . 5.  $6\frac{3}{8}$ .  
 6.  $11\frac{21}{16}$ . 7.  $1\frac{107}{16}$ . 8.  $2\frac{91}{20}$ . 9.  $2\frac{101}{20}$ . 10.  $23\frac{9}{4}$ . 11.  $29\frac{71}{20}$ .  
 12.  $98\frac{7}{2}$ . 13.  $154\frac{5}{8}$ . 14.  $555\frac{7}{8}$ . 15.  $1498\frac{9}{4}$ . 16.  $2\frac{4}{5}$ . 17.  $2\frac{1}{10}$ .  
 18.  $5\frac{3}{4}$ . 19.  $14\frac{1}{4}$ . 20.  $12\frac{5}{8}$ . 21.  $13\frac{5}{12}$ . 22.  $2\frac{9}{8}$ . 23.  $7\frac{9}{24}$ .  
 24.  $36\frac{1}{8}$ . 25. 55. 26.  $7\frac{1}{8}$ . 27.  $2\frac{5}{8}$ . 28.  $948\frac{11}{4}$ . 29.  $174\frac{71}{20}$ .  
 30.  $35\frac{3}{8}$ .

Lesson 55 – Practical 112-113

See lesson for answers.

Lesson 56 – Test 113

- Article II3.**—1.  $13\frac{5}{8}$ . 2.  $24\frac{3}{10}$ . 3.  $8\frac{4}{9}$ . 4.  $9\frac{2}{5}$ . 5.  $72\frac{1}{2}$ .  
 6.  $11\frac{3}{5}$ . 7.  $8\frac{3}{4}$ . 8.  $159\frac{1}{3}$ . 9.  $9\frac{1}{2}$ . 10.  $19\frac{8}{5}$ . 11.  $11\frac{2}{3}$ .  
 12.  $199\frac{3}{4}$ . 13.  $142\frac{9}{4}$ . 14.  $74\frac{8}{9}$ . 15.  $287\frac{1}{2}$ . 16.  $26\frac{1}{5}$ . 17.  $352\frac{2}{5}$ .  
 18.  $368\frac{3}{4}$ . 19.  $11\frac{2}{5}$ . 20.  $327\frac{9}{10}$ . 21.  $186\frac{8}{3}$ . 22.  $53\frac{5}{8}$ .  
 23.  $876\frac{1}{2}$ . 24.  $279\frac{1}{10}$ .

Lesson 57 – Practical 114

See lesson for answers.

Lesson 58 – Test 114

- Article II4.**—1.  $\frac{1}{24}$ . 2.  $\frac{13}{77}$ . 3.  $\frac{1}{80}$ . 4.  $\frac{29}{144}$ . 5.  $\frac{23}{80}$ . 6.  $\frac{29}{80}$ .  
 7.  $\frac{3}{8}$ . 8.  $\frac{15}{88}$ . 9.  $\frac{13}{80}$ . 10.  $\frac{7}{132}$ . 11.  $3\frac{5}{12}$ . 12.  $3\frac{7}{4}$ . 13.  $1\frac{43}{52}$ .  
 14.  $7\frac{3}{16}$ . 15.  $1\frac{4}{1}$ . 16.  $8\frac{91}{42}$ . 17.  $5\frac{73}{30}$ . 18.  $652\frac{8}{1}$ . 19.  $578\frac{7}{8}$ .  
 20.  $4\frac{11}{40}$ . 21.  $21\frac{88}{80}$ . 22.  $102\frac{9}{40}$ . 23.  $8989\frac{7}{8}$ .

Lesson 59 – Practical 115

See lesson for answers.

Lesson 60 – Test 115

- Article 115.**—1.  $\frac{63}{80}$ . 2.  $\frac{2}{9}$ . 3.  $\frac{3}{10}$ . 4.  $\frac{7}{18}$ . 5.  $\frac{51}{250}$ . 6.  $2\frac{1}{4}$ .  
 7.  $\frac{1}{9}$ . 8.  $\frac{5}{8}$ . 9.  $\frac{10}{63}$ . 10.  $1\frac{5}{7}$ . 11.  $14\frac{6}{11}$ . 12.  $8\frac{4}{7}$ . 13.  $145\frac{3}{5}$ .  
 14.  $34\frac{2}{7}$ . 15. 154. 16. 84. 17.  $320\frac{2}{5}$ . 18. 675. 19.  $3473\frac{1}{3}$ .  
 20.  $189\frac{1}{16}$ . 21.  $2441406\frac{1}{4}$ . 22.  $321\frac{4}{5}$ . 23.  $306\frac{2}{3}$ . 24. 500.  
 25. 1960. 26.  $26\frac{2}{3}$ . 27.  $9\frac{6}{25}$ . 28. 840. 29.  $31\frac{1}{3}$ . 30. 32130.  
 31. 5200. 32.  $48\frac{8}{9}$ .

Lesson 61 – Practical 116

See lesson for answers.

Lesson 62 – Test 116

- Article 116.**—1.  $63\frac{7}{11}$ . 2.  $156\frac{3}{5}$ . 3.  $77\frac{1}{2}$ . 4.  $21\frac{7}{9}$ . 5.  $7\frac{2}{9}$ .  
 6.  $18\frac{19}{30}$ . 7.  $17\frac{1}{9}$ . 8.  $37\frac{1}{3}$ . 9.  $1\frac{67}{20}$ . 10.  $662\frac{1}{2}$ . 11.  $100\frac{4}{5}$ .  
 12.  $56\frac{8}{9}$ .

Lesson 63 – Practical 117

See lesson for answers.

Lesson 64 – Test 117

- Article 117.**—1.  $\frac{27}{8}$ . 2.  $\frac{17}{28}$ . 3.  $1\frac{1}{9}$ . 4.  $8\frac{1}{3}$ . 5.  $\frac{85}{168}$ .  
 6.  $1\frac{14}{195}$ . 7.  $\frac{1}{45}$ . 8.  $10\frac{26}{45}$ . 9.  $10\frac{4}{15}$ . 10.  $\frac{1}{875}$ . 11.  $6\frac{3}{7}$ . 12. 7.  
 13.  $4\frac{7}{12}$ . 14.  $10\frac{1}{5}$ . 15.  $1\frac{7}{17}$ . 16.  $2\frac{59}{128}$ . 17.  $\frac{5}{78}$ . 18.  $23\frac{4}{7}$ .  
 19.  $\frac{3}{40}$ . 20.  $5\frac{7}{9}$ . 21.  $\frac{931}{2250}$ . 22.  $2\frac{1}{2}$ . 23.  $1\frac{1}{3}$ . 24.  $84\frac{7}{12}$ .  
 25.  $\frac{27}{35}$ . 26.  $24\frac{14}{15}$ . 27.  $5\frac{35}{57}$ . 28.  $1\frac{05}{118}$ .

Lesson 65 – Intellectual 34

1)  $\frac{2}{3}$ , 8)  $22\frac{1}{2}$ , 9)  $6\frac{3}{4}$ , 18)  $6\frac{2}{5}$ , 28)  $12\frac{6}{7}$ , 29)  $\$6\frac{2}{3}$ , 31)  $\$12$ , 32)  $\$35$

Lesson 66 – Intellectual 35

1) 3, 2)  $7\frac{1}{2}$ , 15) 45

Lesson 67 – Intellectual 36

1) 4, 4)  $4\frac{2}{3}$ , 16) 2, 22)  $6\frac{1}{3}$

Lesson 68 – Intellectual 37

1)  $\frac{1}{4}$ , 7)  $\frac{1}{14}$ , 11)  $\frac{3}{8}$ , 13)  $\frac{2}{15}$ , 17)  $\frac{8}{15}$ , 18)  $\frac{1}{2}$



**Lesson 69 – Intellectual 38**

1)  $1\frac{1}{4}$ , 9)  $\$2\frac{3}{16}$

**Lesson 70 – Intellectual 39**

1)  $\$40$ , 16) 35, 23)  $\$1\frac{4}{5}$ , 28) 20

**Lesson 71 – Intellectual 40**

1)  $4\frac{1}{5}$ , 12)  $3\frac{1}{3}$ , 11) 3, 14) 2

**Lesson 72 – Practical 118**

See lesson for answers.

**Lesson 73 – Test 118**

**Article 118.—** 1.  $31\frac{1}{4}$  ct.    2.  $56\frac{1}{4}$  ct.    3.  $64\frac{7}{2}$  ct.    4.  $\$85$ .  
 5.  $\$11\frac{1}{5}$ .    6.  $\$6\frac{9}{18}$ .    7.  $\$41280$ .    8.  $\$10\frac{4}{5}$ .    9.  $\$4.84\frac{3}{8}$ .    10. 45 ct.  
 11.  $\$1$ .    12.  $\$177.30$ .    13.  $2\frac{5}{8}$ .    14.  $7\frac{1}{2}\frac{5}{8}$ .    15.  $31\frac{1}{2}\frac{7}{5}$ .    16.  $89\frac{1}{10}$  mi.  
 17.  $\$136\frac{2}{3}$ .    18. 19 A.    19.  $91\frac{1}{8}$  C.    20.  $\$16$ .    21.  $\$125$ .  
 22.  $\$121\frac{3}{8}$ .    23.  $\$1.37\frac{1}{2}$ .    24.  $2\frac{3}{4}\frac{2}{5}$  A.

**Lesson 74 – Practical 119**

See lesson for answers.

**Lesson 75 – Test 119**

**Article 119.—** 1.  $1\frac{1}{8}$ .    2.  $\frac{9}{7}$ .    3.  $1\frac{1}{2}$ .    4.  $6\frac{2}{3}$ .    5.  $21\frac{1}{3}$ .    6.  $\frac{3}{180}$ .  
 7.  $1\frac{1}{8}\frac{1}{4}$ .    8.  $5\frac{1}{3}\frac{3}{8}$ .    9.  $\frac{2}{5}$ .    10.  $3\frac{1}{13}$ .    11.  $17\frac{1}{2}$ .    12.  $\frac{4}{15}$ .    13.  $4\frac{2}{5}$ .  
 14.  $4\frac{2}{7}$ .    15.  $48\frac{6}{13}$ .    16.  $\frac{2}{125}$ .    17. 1700.    18.  $3\frac{9}{11}$ .    19.  $1\frac{47}{120}$ .  
 20.  $5\frac{5}{7}$ .    21.  $\frac{59}{83}$ .    22. 375.    23.  $9\frac{1}{5}$ .    24.  $95\frac{3}{25}$ .    25.  $\frac{18}{85}$ .    26.  $\frac{11}{500}$ .  
 27.  $21\frac{7}{18}$ .    28.  $\frac{3}{5}$ .    29.  $1127\frac{1}{4}$ .    30.  $2\frac{2402}{887}$ .    31.  $1\frac{1}{2}\frac{1}{4}$  ct.  
 32.  $\$34\frac{1}{4}$ .    33.  $57\frac{1}{20}$  A.    34.  $\frac{1}{12}$  yd.    35.  $17\frac{7}{9}$  ct.    36.  $17\frac{1}{4}\frac{9}{3}$  lb.  
 37.  $\frac{4}{15}$  lb.    38. 45.    39.  $\frac{1}{24}$  oz.    40.  $\$3\frac{3}{18}$ .    41.  $9\frac{3}{8}$  da.    42.  $\$1\frac{6}{55}$ .  
 43.  $12\frac{9}{7}$  yd.    44.  $8\frac{1}{2}\frac{6}{8}$  lb.    45.  $7\frac{9}{25}$  da.

**Lesson 76 – Practical 120**

See lesson for answers.

Lesson 77 – Test 120

- Article 120.**— 1.  $\frac{3}{8}$ . 2.  $\frac{4}{15}$ . 3.  $\frac{1}{49}$ . 4.  $\frac{13}{15}$ . 5.  $\frac{7}{10}$ . 6.  $\frac{1}{12}$ .  
 7.  $\frac{9}{14}$ . 8.  $\frac{72}{77}$ . 9.  $\frac{1}{24}$ . 10.  $\frac{9}{198}$ . 11.  $\frac{3}{20}$ . 12.  $\frac{15}{77}$ . 13.  $\frac{7}{10}$ .  
 14.  $\frac{7}{9}$ . 15.  $\frac{1}{30}$ . 16.  $\frac{35}{72}$ .

Lesson 78 – Practical 121

See lesson for answers.

Lesson 79 – Test 121

- Article 121.**— 1.  $\frac{63}{80}$ . 2.  $\frac{20}{21}$ . 3.  $\frac{32}{45}$ . 4.  $\frac{21}{880}$ . 5.  $\frac{11}{53}$ . 6.  $\frac{65}{132}$ .  
 7.  $3\frac{1}{5}$ . 8.  $\frac{21}{484}$ . 9.  $\frac{369}{1240}$ . 10.  $\frac{5}{49}$ . 11.  $\frac{35}{48}$ . 12.  $\frac{2}{3}$ . 13.  $\frac{40}{129}$ .  
 14.  $\frac{4}{9}$ . 15.  $\frac{4}{9}$ .

Lesson 80 – Intellectual 41

1)  $\frac{2}{3}$ , 5)  $1\frac{1}{8}$ , 9)  $1\frac{1}{15}$ , 10)  $\frac{4}{5}$ , 14)  $1\frac{1}{5}$ , 19)  $1\frac{1}{6}$

Lesson 81 – Intellectual 42

1)  $1\frac{5}{7}$ , 7) 4

Lesson 82 – Intellectual 43

1)  $7\frac{2}{7}$ , 22) 6

Lesson 83 – Intellectual 44

1) \$18, 5)  $\frac{1}{5}$ , 10)  $\frac{1}{4}$ , 11)  $\frac{1}{15}$ , 12) on each  $\frac{1}{10}$ , on the whole lot \$3, 14) \$2, 21) 36, 25) 400, 29) 12

Lesson 84 – Practical 122

See lesson for answers.

Lesson 85 – Test 122

- Article 122.**— 1.  $2\frac{13}{8}$ . 2.  $3\frac{1}{5}$ . 3.  $4\frac{31}{8}$  lb. 4.  $\$13\frac{3}{4}$ . 5.  $1\frac{3}{5}$ .  
 6.  $\$61\frac{3}{5}$ . 7.  $3\frac{3}{4}$  yd. 8.  $33\frac{3}{4}$  lb. 9.  $5\frac{1}{2}$  times. 10. 8. 11.  $13\frac{8}{9}$  A.  
 12.  $\frac{27}{98}$ . 13. 40. 14.  $18\frac{1}{4}$ . 15.  $\frac{1}{100}$ . 16.  $\$16\frac{4}{5}$ . 17.  $13\frac{1}{3}$  yd.

Lesson 86 – Practical 123

See lesson for answers.

Lesson 87 – Test 123

- Article 123.**—1. 132 yd.    2. 4840 sq. yd.    3. 40 yr. 80 da.  
 4. \$3.82½.    5. 22869 sq. ft.    6. \$180½.    7. 952 sq. rd.    8. \$53.20.  
 9. \$123.75.    10. \$33.47½.    11. 112392 hr.    12. \$15.31¼.  
 13. \$21.25.    14. 35½ ct.    15. 29½ ct.    16. \$1.89½.    17. 32½ ct.  
 18. 10 mi. 12 rd. 2 ft.    19. 18150 sq. yd.    20. 2 mi. 4 rd.  
 21. 18817920 sq. in.    22. 12 rd.    23. 9600.    24. 77 yr. 35¾ da.

Lesson 88 – Practical 124

See lesson for answers.

Lesson 89 – Practical 125

See lesson for answers.

Lesson 90 – Test 124-125

- Articles 124 and 125.**—1. ¾ qt.    2. ¾ pt.    3. ¼ oz.    4. 1½ sq. yd.  
 5. ⅔ cu. ft.    6. ¾ da.    7. 1½ oz.    8. ½ pwt.    9. 1½ ∅.  
 10. ⅔ sq. rd.    11. 1582½ cu. in.    12. 2½ sec.    13. 1½ pt.  
 14. 1½ min.    15. ¾ gi.    16. 2 qt. 3 gi.    17. 12 cwt. 72 lb.  
 11½ oz.    18. 302 rd. 1 yd. 8 in.    19. 153 sq. rd. 10 sq. yd. 108  
 sq. in.    20. 202 da. 22 hr.    21. 9 oz. 6 pwt. 16 gr.    22. 3 qt.  
 1 pt. 3½ gi.    23. 7 ∅ 1 ∅ 10 gr.    24. 9 cwt. 37 lb. 8 oz.  
 25. 2 yd.    26. 1' 48".    27. 5 A. 46 sq. rd. 8 sq. yd. 4 sq. ft. 72  
 sq. in.    28. 3 rd. 1 yd. 3½ in.    29. 39 cu. ft. 874½ cu. in.  
 30. 3 f. 3 1 f. 3 36 m.    31. 10 hr. 57 min. 46½ sec.

Lesson 91 – Practical 126

See lesson for answers.

Lesson 92 – Test 126

- Article 126.**—1. 1800 da.    2. 2580 C.    3. 1152 sq. yd.  
 4. 2250 cwt.    5. 19 gal.    6. 10 bu.    7. 1800 oz.    8. 3072 cu. yd.  
 9. 18 lb.    10. 240 mi.    11. 1024000 sq. mi.    12. 90 yr.  
 13. 2880 T.    14. 218 chain.    15. 112 gal.    16. 512 bu.

Lesson 93 – Practical 127

See lesson for answers.

Lesson 94 – Test 127

- Article 127.**—1.  $\frac{4}{15}$ . 2.  $\frac{34}{85}$ . 3.  $\frac{1}{72}$ . 4.  $\frac{5}{28}$ . 5.  $\frac{1}{9}$ . 6.  $\frac{807}{2420}$ .  
7.  $\frac{11}{10}$ . 8.  $\frac{5}{81}$ . 9.  $\frac{50}{171}$ . 10.  $\frac{3}{10}$ . 11.  $\frac{161}{320}$ . 12.  $\frac{7}{24}$ . 13.  $\frac{1}{360}$ .

Lesson 95 – Practical 128

See lesson for answers.

Lesson 96 – Test 128

- Article 128.**—1. 1 sq. ft. 72 sq. in. 2. 124 cu. ft. 3. 44' 12".  
4. 4 oz. 12 pwt. 5. 6 cwt. 70 lb. 6. 1 Cong. 3 O. 5 f.  $\bar{3}$  2 f.  $\bar{3}$   
40 m. 7. 191 rd. 2 yd. 1 ft. 4 in. 8. 3 rd. 2 yd. 2 ft. 5 in.  
9. 5 da. 17 hr. 16 min. 10. 3 pk. 7 qt. 11. 2 qt. 1 pt. 12. 12  
cwt. 9 lb. 4 oz. 13. 87 rd. 3 yd. 2 ft. 6 in. 14. 2  $\bar{3}$  1  $\bar{9}$ .  
15. 70 cu. ft.

Lesson 97 – Practical 129

See lesson for answers.

Lesson 98 – Test 129

- Article 129.**—1.  $\frac{19}{30}$ . 2. 145 A. 72 sq. rd. 22 sq. yd. 3.  $5\frac{1}{4}$ .  
4.  $13\frac{1}{3}$ . 5.  $\frac{56}{128}$ . 6.  $\frac{9}{13}$ . 7.  $\frac{18}{20}$ . 8.  $7\frac{1}{5}$ . 9. 21. 10.  $\frac{17}{35}$ . 11.  $\frac{49}{77}$ .  
12.  $\frac{1}{125}$ . 13.  $\frac{8}{31}$  lb. 14.  $\$5\frac{5}{14}$ . 15. \$131.25. 16.  $\$2\frac{7}{8}$ . 17.  $\frac{4}{75}$ .  
18.  $26\frac{2}{3}$  T. 19.  $\$62\frac{13}{20}$ . 20.  $23\frac{6}{11}$ . 21.  $\frac{3}{7}$ . 22. \$55. 23.  $\frac{9}{25}$ .  
24. 2 cwt. 57 lb. 11 oz. 25.  $544\frac{4}{5}$ . 26. 270. 27. 264. 28.  $\frac{69}{72}$ ,  
 $\frac{64}{72}$ ,  $\frac{42}{72}$ ,  $\frac{45}{72}$ . 29. 18. 30. \$678. 31. \$11.75. 32. 60. 33. \$70.  
34. \$3368. 35.  $\$4\frac{1}{10}$ . 36. \$396.80. 37.  $1638\frac{1}{2}$  A.  
38.  $\$1415\frac{11}{20}$ . 39.  $\frac{9}{50}$ . 40. 6 A. 125 sq. rd.

Lesson 99 – Practical 130

See lesson for answers.

Lesson 100 – Test 130

- Article 130.—** 1. \$112.50. 2. \$49. 3. \$77. 4. \$420.625.  
 5. \$180. 6. \$85.89. 7. \$605.25. 8. \$1280.50. 9. \$31.25.  
 10. \$1351.50. 11. \$298.50. 12. \$222. 13. \$370.50. 14. \$631.  
 15. \$14.375. 16. \$42.40. 17. \$47.43. 18. \$1.68 $\frac{3}{4}$ . 19. \$1.50.  
 20. \$6.468. 21. \$13.50. 22. \$13.41. 23. \$11.85. 24. \$14.90.  
 25. \$30.54. 26. \$25.30. 27. 21 bu. 28. 42 $\frac{1}{2}$  yd. 29. \$6.25.  
 30. \$1.25. 31. \$12.33 $\frac{1}{3}$ . 32. \$1.33 $\frac{1}{3}$ . 33. 83 $\frac{1}{3}$  A. 34. \$58.66 $\frac{2}{3}$ .  
 35. \$8.05. 36. \$137.64.

Lesson 101 – Intellectual 45

22) 21, 25) 20, 26) 7, 28) 8

Lesson 102 – Intellectual 46

6) 6  $\frac{3}{4}$ , 8)  $\frac{48}{120} = \frac{2}{5}$ ,  $\frac{54}{189} = \frac{2}{7}$ ,  $\frac{240}{288} = \frac{5}{6}$ , 9)  $\frac{1}{9} = \frac{16}{144}$ ,  $\frac{3}{9} = \frac{48}{144}$ ,  $\frac{1}{16} = \frac{9}{144}$ ,  $\frac{4}{16} = \frac{36}{144}$ ,  
 $\frac{1}{72} = \frac{2}{144}$ ,  $\frac{17}{72} = \frac{34}{144}$ , 12) He traveled  $\frac{5}{12}$  or 35 miles, 21) \$72, 22) 10, 23) 8, 25) 72, 26) Four sevenths  
of 35 are 20, and 20 is  $\frac{5}{6}$  of 24. Three eights of 16 are 6, and 24 is 4 times 6, 27) \$4, 33) \$1  $\frac{1}{2}$ , 37) 5, 38) 45,  
39) \$3  $\frac{1}{3}$ , 41) 24, 44) 18, 50) \$4, 60) 36, 79) \$1, 80) 8, 81)  $\frac{1}{12}$  min, 210 yd, 85) 12, 89)  $\frac{2}{3}$ , 91) \$15 total,  
 $\frac{3}{7}$  per yd., 93) 24.

Lesson 103 – Practical 131-132

1) See lesson for answer, 2) a. ten-thousand, b. thousand, c. hundred, d. ten, e. unit, f. tenth, g. hundredth, h.  
thousandth, i. ten-thousandth

Lesson 104 – Practical 133-134

1) .1, 2) .5, 3) .9, 4) .02, 5) .04, 6) .08, 7) .003, 8) .006, 9) .0001, 10) .0005, 11) .00004, 12) .00006, 13)  
.000007, 14) .000009

Lesson 105 – Practical 135

See lesson for answers.

Lesson 107 – Practical 136

See lesson for answers.

Lesson 109 – Practical 137-139

1) Reduction, Addition, Subtraction, Multiplication, and Division; 2) a. 7.0, 7.000000; b. 9.0, 9.00; c. 100.0,  
100.00, 100.0000; d. 73.0, 73.00000, 73.00; e. 4321.0, 4321.00

Lesson 110 – Practical 140-141

See lesson for answers.

Lesson 111 – Test 141

- Article 141.**— 1.  $\frac{7}{8}$ . 2.  $\frac{16}{25}$ . 3.  $\frac{64}{125}$ . 4.  $\frac{5}{8}$ . 5.  $\frac{1}{40}$ . 6.  $\frac{32}{125}$ .  
 7.  $\frac{1}{400}$ . 8.  $\frac{139}{825}$ . 9.  $\frac{39}{40}$ . 10.  $\frac{21}{2500}$ . 11.  $\frac{3}{18}$ . 12.  $\frac{15}{32}$ . 13.  $4\frac{9}{200}$ .  
 14.  $26\frac{9}{50}$ . 15.  $\frac{1}{80}$ . 16.  $19\frac{5}{8}$ . 17.  $300\frac{1}{4}$ . 18.  $46\frac{7}{8}$ . 19.  $13\frac{23}{25}$ .  
 20.  $20\frac{1}{50}$ . 21.  $\frac{11}{18}$ . 22.  $14\frac{3}{160}$ . 23.  $9\frac{1}{25}$ . 24.  $\frac{11}{32}$ .

Lesson 112 – Practical 142

See lesson for answers.

Lesson 113 – Test 142

- Article 142.**— 1. .375. 2. .45. 3. .3125. 4. .44. 5. .26.  
 6. .1875. 7. .40625. 8. .53125. 9. 1.3125. 10. .01875.  
 11. .00125. 12. .068. 13. .018. 14. .85625. 15. .0171875.  
 16. .953125. 17. 1.78. 18. .56179+. 19. .2394+. 20. .4.  
 21. .75. 22. .9423+. 23. .135. 24. .0418+.

Lesson 114 – Practical 143

See lesson for answers.

Lesson 115 – Test 143

- Article 143.**— 1. 153.13. 2. 146.23. 3. 600. 4. .458843.  
 5. 662.2829. 6. 694.532. 7. 989.1009. 8. 3551.979. 9. 192.06.  
 10. 2767.9932. 11. 1872.448. 12. 5517.789. 13. 599.4.  
 14. 1472.827755.

Lesson 116 – Practical 144

See lesson for answers.

Lesson 117 – Test 144

- Article 144.**— 1. 27.488. 2. 9.17. 3. 35.8761. 4. 253.125.  
 5. 256.7989. 6. 225.612. 7. 8.4476. 8. 88.888. 9. 16.92924.  
 10. 18.825. 11. 49.911. 12. 124.1376. 13. .576. 14. 88.850034.  
 15. 50895.3573.

Lesson 118 – Practical 145-147

See lesson for answers.

Lesson 119 – Test 147

**Article 147.**—**1.** .57227. **2.** 222.5. **3.** 740.25. **4.** .01575.  
**5.** 2377.05. **6.** .0006. **7.** .093. **8.** .00135. **9.** .9702. **10.** 3696.3.  
**11.** .0021. **12.** 2250. **13.** .031777. **14.** .02121696. **15.** 4207.5.  
**16.** 169.119. **17.** 294.06. **18.** .0797449. **19.** 730675.2. **20.** 729.  
**21.** 80000. **22.** 4503744. **23.** 310. **24.** 94.87.

Lesson 120 – Practical 148-150

See lesson for answers.

Lesson 121 – Test 150

**Article 150.**—**1.** 1.67. **2.** 7.53. **3.** 2.115. **4.** 2.5. **5.** .024.  
**6.** 14.95. **7.** .00345. **8.** 12.5. **9.** 400.3. **10.** 4000. **11.** .21.  
**12.** 41000. **13.** .96875. **14.** .000025. **15.** 4.5. **16.** .0625.  
**17.** 9.25. **18.** .75. **19.** 10000. **20.** .32. **21.** .06636+.  
**22.** .301003+. **23.** .0000066+. **24.** 98.21428+.

Lesson 122 – Practical 151

See lesson for answers.

Lesson 123 – Test 151

**Article 151.**—**1.** .8 pt. **2.** .2184 pt. **3.** .86 lb. **4.** .99 in.  
**5.** .768 sq. rd. **6.** .11664 cu. in. **7.** .972 sec. **8.** .48 cu. ft.  
**9.** .7452 sq. in.

Lesson 124 – Practical 152

See lesson for answers.

Lesson 125 – Test 152

**Article 152.**—**1.** 1 pk. 6 qt. **2.** 1 qt. 1 pt. 2 gi. **3.** 3 cwt.  
12 lb. 8 oz. **4.** 50 rd. **5.** 250 A. **6.** 89 cu. ft. 1036.8 cu. in. **7.** 138  
da. 19 hr. 4 min. 48 sec. **8.** 16° 55' 12''.

Lesson 126 – Practical 153

See lesson for answers.

Lesson 127 – Test 153

**Article 153.**— 1. .0055 bu.    2. .015 gal.    3. .0005 sq. yd.  
 4. .0000125 cu. yd.    5. .01475 bu.    6. .0003375 da.    7. .000256 cwt.  
 8. .04875 gal.    9. .0000015 da.    10. .000234375 bu.  
 11. .000000625 C.    12. .00002 yr.    13. .0000125 mi.    14. .00024 T.  
 15. .000000027+ A.

Lesson 128 – Practical 154

See lesson for answers.

Lesson 129 – Test 154

**Article 154.**—1. 1 hr. 12 min.    2. \$16.24.    3. 5 A.    4. \$2.185.  
 5. 118 lb. 2 oz.    6. 42 rd.    7. 36 C. 32 cu. ft.    8. 128 rd. 2 yd.  
 1 ft. .6 in.    9. 14 cwt. 95 lb.    10. 32 gal. 1 qt. 1 pt.    11. \$9990.  
 12. 7 qt. 1 pt.    13. \$61.32.    14. 233 mi. 132.8 rd.    15. 38 da.  
 5 hr. 48 min.    16. .375.    17. 1 pk. 7 qt. .4 pt.    18. 42 sq. rd.  
 19. 1 cwt. 33 lb. 12 oz.    20. \$109.20.    21. 20 yd. 1 ft. 10.5 in.  
 22. 158 lb. 8 oz.    23. \$121.80.    24. \$65.73.    25. 81 ct.  
 26. 281 da. 5 hr. 49 min. 12 sec.    27. 9 hr. 13 min. 7.5 sec.  
 28. \$6.    29. 3 mi. 40 rd.    30. \$612.50.

Lesson 130 – Intellectual 47

1) 20 mills, 6) 200 cents, 8) 2, 11) 2

Lesson 131 – Intellectual 48

7) 7 pt., 13) 8 qt. 1 pt., 17) 1 pk. 5 qt. 1 pt.

Lesson 133 – Intellectual 50

9) 8 oz, 16) 3/4 lb.

Lesson 134 – Intellectual 51

10) 2 ft. 6 in., 15) 1/20 of a mile

Lesson 136 – Intellectual 53

1) \$3.45, 2) \$1.85, 4) \$66, 5) 85 miles, 8) 7 3/5 hours, 9) 7 3/4 ft., 11) 95 ct., 13) \$2.25, 14) 25 mi per hr., 15) 3, 17) 5 lb. 14 oz., 20) 15 ct. 21) \$90 10/11.

Lesson 137 – Intellectual 54

15) \$11



**Lesson 138 – Intellectual 55**

2) \$5  $\frac{5}{8}$ , 12) \$12  $\frac{3}{5}$ , 15) 3  $\frac{3}{4}$ , 18) 2  $\frac{4}{5}$ , 22) 1  $\frac{3}{5}$ , 25) 11, 26) 24, 27) 8 mi., 30) 14, 31) 20 ct., 32) A = 28 ct., B = 16 ct., 33) apple = 32, pear = 24, plum = 8, 34) apple = 35, pear = 10

**Lesson 139 – Intellectual 56**

1) 7, 3) 12, 5) first = 4, second = 8, third = 12, 10) 4, 12, 11) 4, 12) 13, 13) 6, 18) 20 ct., 19) Thomas = 11, William = 9, 20) Mary = 17, Sarah = 7, 21) 15, 22) 28, 23) 35, 24) Henry = 30, James = 14, Oliver = 13, 25) Mary = 18 ct., Jane = 10 ct., Sarah = 15 ct., 26) Mary = 27, Frank = 15, 27) watch = \$27, chain = \$15, ring = \$20, 28) 126, 29) John = \$17, James = \$7, Frank = \$31, 30) Joseph = \$10, Thomas = \$4, Paul = \$8, 31) horse = \$75, buggy = \$125, harness = \$25

**Lesson 140 – Intellectual 57**

1) greater = 9, less = 6, 2) \$42, 3) 24 mi, 4) first = 63, second = 37, 5) first = 20, second = 10, third = 15, 6) A = 20 ct., B = 12 ct., C = 8 ct., 9) A = 18 ct., B = 20 ct., 10) sheep = 35, cows = 20, 11) greater = 36, smaller = 24, 12) Sarah = 6, Mary = 8, 13) first = 27, second = 24, 14) peach = 35, apple = 30, 15) 6 mi, 16) apple = 36, plum = 12, cherry = 21, 17) Sarah = 24, Jane = 21, 18) 9 times, 19) John = \$36 Charles = \$60, 20) hogs = 48, sheep = 32, cows = 24, 21) 4, 22) 4:30 P.M., 23) 2 hr. past noon, 24) 3:00 P.M., 25) 4:00 P.M., 26) 1:20 P.M.

**Lesson 141 – Intellectual 58**

1) 10, 2) 12, 4) 20, 5) 28, 6) 20, 7) 12, 8) 24 years, 9) 50 cents, 10) 030, 11) 55 yr. 12) 15 yr. 13) 36 yd., 14) 15, 15) 30 years

**Lesson 142 – Intellectual 59**

4) 2  $\frac{2}{3}$ , 5)  $\frac{2}{5}$ , 7)  $\frac{3}{5}$ , 8)  $\frac{3}{4}$ , 9)  $\frac{19}{20}$ , 11) 4 days, 12) 2  $\frac{11}{12}$ , 13) 1 day, 10) 1  $\frac{1}{5}$  days, 14) 6 days, 15) 20 days, 16) 24 days, 17) 1  $\frac{1}{5}$  days, 18) 1  $\frac{3}{7}$  days, 19) 2 days

**Lesson 143 – Intellectual 60**

3) 6, 8) 12, 9) 2, 10) 2, 11) 2  $\frac{1}{2}$ , 12) John's = 10 ct., George's = 15 ct., 13) 20 and 28, 18) 12, 19) 5 yd. and 20 yd., 22) 5 doz. and 2  $\frac{1}{2}$  doz., 23) A = \$35 and B = \$21, 24) C = \$18, D = \$12

**Lesson 144 – Intellectual 61**

1) first = 10, second = 12, 3) A = ct. and B = 8 ct. 5) first = \$10, second = \$18, 7) sound = 21, not = 9, 8) 12 ft., 15 ft., 9) first = 15, second = 20, third = 25, 10) first = 7, second = 14, third = 21, fourth = 28, 11) first = 18, second = 12, third = 9, 12) William = 9, Thomas = 12, John = 15, 13) A = \$45  $\frac{1}{2}$ , B = \$91, C = \$227  $\frac{1}{2}$ , 14) A = \$24, B = \$12, C = \$6, 15) A = 20, B = 15, C = 10, 16) horses = 6, cows = 18, sheep = 36, 17) A = 7, B = 14, C = 21, 18) Emma = 5, Agnes = 10, Sarah = 20

**Lesson 145 – Intellectual 62**

1) 10, 2) 10, 4) 4  $\frac{1}{2}$  hr., 5) \$48, 6) \$12, 7) \$48, 8) 4, 10) four-cent = 15, five-cent = 12, 11) \$4 a bbl. = 6 oz., \$5 a bbl. = 4  $\frac{4}{5}$  oz., 12) 12 oz., 13) 8 oz., 14) 50 men, 15) 4  $\frac{1}{6}$  days, 16) 5  $\frac{1}{2}$  days, 17) \$56, 18) \$45, 19) 7  $\frac{1}{2}$  rd., 20) 20 bu., 21) 10 days, 22) \$880, 23) 126 sheep

**Lesson 146 – Intellectual 63**

1) A = \$15, B = \$10, 2) A = \$35, B = \$25, 3) A = \$24, B = \$48, 4) A = \$14, B = \$21, 5) C = \$18, D = \$27, 6) A = \$36, B = \$45, 7) A = \$25, B = \$30, 8) E = \$9, F = \$18, 9) M = \$60, N = \$90, 10) C = \$150, D = \$100, 11) E =

\$210, F = \$560, 12) A = \$1300, B = \$1100, 13) C = \$420, D = \$560, 14) A = \$700, B = \$1000, 15) E = \$300, F = \$540

**Lesson 147 – Practical 155**

1) meter, 2) ar, 3) liter, 4) gram, 5) deci, 6) centi, 7) milli, 8) deka, 9) hekto, 10) kilo, 11) myria, 12) right, 13) left.

**Lesson 148 – Practical 156**

See lesson for answers.

**Lesson 149 – Test 156**

**Article 156.—** 1. 394500 dm. 2. .09364 Km. 3. 1.23456 Mm.  
 4. 98765 Dm. 5. .000034 Mm. 6. 74600 cm. 7. .837 Mm.  
 8. 3700 m. 9. 46000000 dm. 10. 5.8 Hm. 11. 374500000 cm.  
 12. .6725 Km. 13. 8.9364 Dm. 14. 4.56 Hm.

**Lesson 150 – Practical 157**

See lesson for answers.

**Lesson 151 – Test 157**

**Article 157.—** 1. 37.468 Ha. 2. 49320 ca. 3. 3.8743 a.  
 4. 3.8743 a. 5. 4387.5 m<sup>2</sup>. 6. .0000457 Ha. 7. .89734 Ha.  
 8. 583900 m<sup>2</sup>. 9. .3843 Ha. 10. 397000 ca.

**Lesson 152 – Practical 158**

See lesson for answers.

**Lesson 153 – Test 158**

**Article 158.—** 1. 48 l. 2. 39500 cl. 3. .4937 Hl. 4. 583900 cl.  
 5. 4.57 l. 6. 678.9 cl. 7. 346.92 Dl. 8. 4.2789 l. 9. 3.2584 Hl.  
 10. .047 Dl. 11. 3800000 dl. 12. 2.97 Dl. 13. .04683 Hl.  
 14. 3870000 dl. 15. 49000 l. 16. .37282 m<sup>3</sup>. 17. .678 m<sup>3</sup>.  
 18. 303 dl.

**Lesson 154 – Practical 159**

See lesson for answers.

Lesson 155 – Test 159

- Article 159.**— 1. .065 M. T.    2. 4893100 mg.    3. 465.3 Dg.  
 4. .6543 Q.    5. 87000 Kg.    6. .000937 g.    7. 123456 dg.  
 8. 8.734 Dg.    9. 88736000 cg.    10. .000000086 Q.    11. .0000765 M.T.  
 12. .3945 Hg.    13. 3894000 gr.    14. 87300000000 mg.  
 15. 89.9 Mg.    16. 4890 dg.    17. .4 Mg.    18. 12 Kg.  
 19. 9.876541 Q.    20. 34560 g.    21. 4800.48 Hg.    22. 90830000 mg.

Lesson 156 – Practical 160

See lesson for answers.

Lesson 157 – Test 160

- Article 160.**— 1. 43 yd. 2 ft. 2.8 in.    2. 123 A. 88 sq. rd.  
 3. 8 cwt. 26 lb. 11.6 oz.    4. 126 rd. 4 yd. 6 in. +    5. 14 T. 6 cwt.  
 59.8 lb.    6. 25 C. 110.8 cu. ft.    7. 2 lb. 4 oz. 2 pwt. 15.gr.  
 8. 654 cu. yd.    9. 747.5 sq. yd.    10. 148 sq. rd. 8 sq. yd.  
 11. 127 bu. 2 pk. 6 qt.    12. 2.54 + m.    13. 160.9347 + Km.  
 14. 83.612 + m<sup>2</sup>.    15. 40.4694 + Ha.    16. 76.4526 m<sup>2</sup>. nearly.  
 17. 12.14 + a.    18. 16.3295 M. T. nearly.    19. 160 Hl.  
 20. 249.834 + l.    21. 500 g.    22. 278.7068 m<sup>2</sup>. nearly.    23. 20 Hl.  
 24. 1 Kg.

Lesson 158 – Practical 161

See lesson for answers.

Lesson 159 – Test 161

- Article 161.**— 1. \$41.8874.    2. \$295.275.    3. \$68.975.  
 4. \$2266.89 +.    5. 38.4 lb.    6. \$27000.    7. \$46.80.    8. \$85.  
 9. \$1400.    10. \$3800.    11. \$10800.    12. \$75.    13. \$14.  
 14. 8 hr. 20 min.

Lesson 160 – Practical 162

See lesson for answers.

**Lesson 161 – Practical 163-164**

See lesson for answers.

**Lesson 162 – Test 164**

**Article 164.—** 1. 259. 2. 156. 3. 207. 4. 99.2. 5. 65.  
 6. 3.3. 7. 7.25. 8. .21. 9. 199. 10. 420. 11. 42. 12. .5188 +.  
 13. 6400. 14.  $\frac{1}{100}$ . 15. 396 bu. 16. 5 da. 22 hr. 48 min.  
 17. 48 ct. 18. 355 A. 19. 1 T. 11 cwt. 80 lb. 20. 3 gal. 3 qt.  
 1 pt. 21. 3 bu. 2 pk. 22. 58 gal. 23.  $\frac{1}{400}$ . 24.  $\frac{1}{15}$ . 25.  $2\frac{7}{9}$ .  
 26. 144.0285.

**Lesson 163 – Practical 165**

See lesson for answers.

**Lesson 164 – Test 165**

**Article 165.—** 1. 12. 2. 75. 3. 17. 4. 75. 5. 75. 6. 16.  
 7. 44. 8. 200. 9. 1000. 10. 75. 11. 125. 12. .2. 13.  $22\frac{1}{2}$ .  
 14.  $12\frac{1}{2}$ . 15. .02. 16.  $36\frac{1}{2}$ . 17. 40. 18. 150. 19. 150.  
 20. 60.

**Lesson 165 – Practical 166**

See lesson for answers.

**Lesson 166 – Test 166**

**Article 166.—** 1. 70. 2. 225. 3. 63000. 4. 175. 5. 320.  
 6.  $5\frac{1}{7}$ . 7. 390. 8. 75. 9.  $2666\frac{2}{3}$ . 10. 17.5. 11. 242.  
 12. 15 bu. 2 pk. 4 qt. 13. 3 da. 11 hr. 20 min. 14. 18 gal. 3 qt.  
 15. 82 T. 16. 23 A. 20 sq. rd.

**Lesson 167 – Practical 167**

See lesson for answers.

**Lesson 168 – Test 167**

**Article 167.—** 1. 1300. 2. 400. 3. 555. 4. 1295. 5. 150.  
 6. 37.5. 7.  $\frac{3}{4}$ . 8. 20. 9.  $6\frac{2}{3}$ . 10. 42000. 11.  $55\frac{5}{9}$ . 12. 30.4.

**Lesson 169 – Practical 168-169**

See lesson for answers.

**Lesson 170 – Test 169**

**Article 169.— 1. \$1900. 2. 95. 3. 16. 4. 128. 5. \$1600.  
6. 456. 7. 150 ft. 8. 48 A. 9. 600 A. 10. 160 A. 11. 400 A.  
12. 1728 mi. 13. 5 ft. 6 in. 14. 42 lb. Troy. 15. 1 oz. 8 pwt.**

**Lesson 171 – Intellectual 64**

1)  $\frac{1}{50}$ , 10)  $\frac{1}{40}$

**Lesson 172 – Intellectual 65**

1) 2, 8) \$2, 13) 38 ct.

**Lesson 173 – Intellectual 66**

1) 50%

**Lesson 174 – Intellectual 67**

1) 40%, 8)  $66\frac{2}{3}\%$ , 9) 20%, 10) 40%, 14) 60%, 15) 30%, 16) 60%, 17) 60%, 18)  $16\frac{2}{3}\%$  loss, 25% gain, 19)  $55\frac{5}{9}\%$

**Lesson 175 – Intellectual 68**

1) \$10, 2) \$20, 3) 10 ct., 4) \$72, 5) \$70, 6) \$12, 7) 3 ct., 8) 50%, 9) 25% loss, 10) 50% gain, 11) \$4  $\frac{1}{2}$ , 12) B lost \$2 more than A gained, 13) \$4, 14) 30%, 15)  $16\frac{2}{3}\%$ , 16) 20%, 17) 140, 18) 12, 19)  $3\frac{11}{20}$ , 20) 8