*7.* 12*s.* 7*d.* 1 far.
*8.* £2 10*s.* 8*d.*
*9.* 15*s.* 8*d.* 3 far.
*10.* £3 14*s.* 5*d.* 1 far.
*11.* £8 16*s.* 11*d.* 1 far.
*12.* £10 3*d.* 2 far.
*13.* £16 13*s.* 3 far.
*14.* $63.26.
*15.* $3.65.
*16.* $50.12.
*17.* $320.82.
*18.* $28.23.
*19.* $16.79.
*20.* £100.
*21.* £24.
*22.* £120.
*23.* $9.80.

### Exercise 79.

*1.* $38.60.
*2.* $36.89.
*3.* $11.67.
*4.* $22.05.
*5.* 388.6 fr., or 315.13 mk.
*6.* 639.63 fr., or 518.7 mk.
*7.* 5061.14 fr., or 4104.2 mk.
*8.* $2.32.
*9.* $7.62.

### Exercise 80.

*1.* 6830 min.
*2.* 885990 min.
*3.* 1304320 min.
*4.* 2714991 min.
*5.* 19009545 sec.
*6.* 27291638 sec.
*7.* 15 hr. 55 min. 30 sec.
*8.* 64 da. 19 hr. 24 min.
*9.* 7 yr. 121 da. 16 hr.
*10.* 1 da. 11 hr. 35 min. 40 sec.
*11.* 2 yr. 19 hr. 8 min.
*12.* 9 yr. 307 da. 7 hr.
*13.* 2912430 sec.
*14.* 7053 hr.
*15.* 78 da.
*16.* 196 da.
*17.* 159 da.
*18.* 85 da.
*19.* 188 da.
*20.* 316 da.
*21.* 187 da.
*22.* 308 da.
*23.* Fall.

### Exercise 82.

*1.* 127045″.
*2.* 540050″.
*3.* 738640″.
*4.* 1188186″.
*5.* 5° 50′ 26″.
*6.* 75° 40″.
*7.* 110° 37′ 14″.
*10.* 13635″.
*11.* 69.173 mi.
*12.* 1.153 mi.

### Exercise 83.

*1.* 880 fathoms.
*2.* $5\frac{1}{3}$ ft.; $3\frac{3}{4}$ ft.
*5.* 1728 u.; 15 doz.
*6.* $4.32.
*7.* 1440 p.; 4320 p.
*8.* 480 s.; 960 s.
*9.* 3 ba. 3 bun. 1 r. 6 q.
*10.* $2\frac{1}{3}$¢.
*11.* 147 bun.
*12.* $\frac{4}{7}$.
*13.* Barley; $19.71.

### Exercise 84.

*1.* 8748 oz.
*2.* 4056231 min.
*3.* 146696 in.
*4.* 31459″.
*5.* $151231\frac{3}{4}$ sq. ft.
*6.* 13383 sh.
*7.* 15956 lb.
*8.* 3770095 sec.
*9.* 1661 pt.
*10.* 1883 pt.
*11.* 171632 cu. in.
*12.* 27372 sq. yd.
*13.* 26861 in.
*14.* 45010 gr.
*15.* 91491 in.
*16.* 55556 gr.
*17.* 3 mi. 73 rd. 4 yd. 1 ft. 6 in.



*18.* 3 A. 65 sq. rd. 15 sq. yd.
*19.* 7 T. 18 cwt. 76 lb. 4 oz.
*20.* 8 bu. 3 pk. 2 qt. 1 pt.
*21.* 15 da. 10 hr. 39 min. 40 sec.
*22.* 9 bbl. 21 gal. 2 qt. 1 pt.
*23.* 7 lb. 8 ℥ 4 ʒ 2 ℈ 16 gr.
*24.* 3 cu. yd. 20 cu. ft. 508 cu. in.
*25.* 66° 35′ 28″.
*26.* 8 lb. 11 oz. 16 pwt. 20 gr.
*27.* 307 rd. 1 yd. 2 ft. 9 in.
*28.* 146 sq. rd. 27 sq. yd. 6 sq. ft.
*29.* 7310 p.
*30.* 1710 times.
*31.* 41 da. $5\frac{1}{3}$ hr.
*32.* 448.
*33.* $6624.
*34.* 1 mi. 130 rd.
*35.* $12523$\frac{1}{2}$.
*36.* 480 sacks.
*37.* 150 sacks.

### Exercise 85.

*1.* 20 cwt. 50 lb. 2 oz.
*2.* 16 yr. 70 da. 20 hr. 55 min. 1 sec.
*3.* 51 lb. 15 pwt. 15 gr.
*4.* 27 lb. 4 ℥ 4 ʒ 1 ℈ 19 gr.
*5.* 38 bu. 2 pk. 7 qt.
*6.* 47 bbl. 11 gal. 3 gi.
*7.* £26 6*s.* 11*d.* 2 far.
*8.* 39 cu. yd. 25 cu. ft. 1435 cu. in.
*9.* 112 mi. 285 rd. 2 yd. 1 ft. 7 in.
*10.* 32 A. 103 sq. rd. 18 sq. yd. 1 sq. ft. 15 sq. in.
*11.* 44 T. 5 cwt. 59 lb. 4 oz.
*12.* 24 mi. 232 rd. 3 yd. 2 ft. 3 in.
*13.* 44 yr. 14 da. 22 hr. 47 min. 12 sec.
*14.* 114° 25′ 41″.
*15.* 42 A. 132 sq. rd. 2 sq. yd. 1 sq. ft. 117 sq. in.
*16.* 42 lb. 6 ℥ 2 ℈ 16 gr.

### Exercise 86.

*1.* 8 bbl. 4 gal. 3 qt. 1 pt.
*2.* 3 T. 15 cwt. 97 lb. 2 oz.
*3.* 2 lb. 9 ℥ 7 ʒ 1 ℈ 12 gr.
*4.* 13 cu. yd. 17 cu. ft. 538 cu. in.
*5.* 8 gal. 2 qt. 1 pt. 1 gi.
*6.* 8° 37′ 35″.
*7.* 11 mi. 186 rd. 4 yd. 1 ft. 3 in.
*8.* 36 A. 118 sq. rd. 14 sq. yd. 6 sq. ft. 65 sq. in.
*9.* 103° 25′ 17″.
*10.* 54° 20′ 14″.
*11.* 30 mi. 270 rd. 1 yd. 9 in.
*12.* 3 bbl. 15 gal. 2 qt. 2 gi.
*13.* 68 mi. 153 rd. 3 yd. 2 ft. 2 in.
*14.* 6 A. 135 sq. rd. 5 sq. yd. 1 sq. ft. 62 sq. in.
*15.* 13 T. 3 cwt. 50 lb. 1 oz.
*16.* 44° 13′ 10″.
*17.* 1 mi. 174 rd. 5 yd. 1 in.
*18.* 51 sq. rd. 21 sq. yd. 3 sq. ft. 6 sq. in.
*19.* 9 mo. 12 da.
*20.* 8 mo. 10 da.
*21.* 4 yr. 4 mo. 7 da.
*22.* 67 yr. 9 mo. 22 da.
*23.* 23 yr. 29 da.
*24.* 26 yr. 6 mo. 18 da.
*25.* 4 yr. 9 mo. 27 da.
*26.* 85 yr. 9 mo. 2 da.
*27.* Jan. 10, 1908.
*28.* Oct. 22, 1782.
*29.* May 17, 1881.
*30.* Mar. 26, 1903; 50 yr. 1 mo. 23 da.; 23 yr. 11 mo. 14 da.

### Exercise 87.

*1.* £52 14*s.* 10*d.* 2 far.
*2.* 58 T. 9 cwt. 78 lb. 12 oz.
*3.* 17 bbl. 14 gal. 3 qt. 2 gi.
*4.* 125 yr. 157 da. 11 hr. 25 min. 20 sec.
*5.* 360 lb. 4 ℥ 7 ʒ 17 gr.
*6.* 121 mi. 136 rd. 5 yd. 2 ft. 8 in.
*7.* 142 mi. 102 rd. 3 yd. 6 in.
*8.* 79 A. 12 sq. rd. 30 sq. yd. 1 sq. ft. 63 sq. in.
*9.* 89 A. 114 sq. rd. 9 sq. yd. 3 sq. ft. 40 sq. in.
*10.* 109° 26′ 15″.
*11.* 1078 bu. 3 pk. 1 qt. 1 pt.
*12.* 491 T. 5 cwt. 30 lb.
*13.* 29 A. 56 sq. rd. 28 sq. yd. 4 sq. ft.
*14.* 21 mi. 300 rd. 1 ft. 3 in.

### Exercise 88.

*1.* 13 bu. 3 pk. 7 qt. 1 pt.
*2.* 3 yr. 214 da. 17 hr. 8 min. 41 sec.
*3.* 9 T. 17 cwt. 48 lb. 15 oz.
*4.* 15 gal. 1 pt. 3 gi.
*5.* 5 mi. 121 rd. 2 yd. 1 ft. 7 in.
*6.* 8 mi. 75 rd. 2 ft. 9 in.
*7.* 4 A. 130 sq. rd. 27 sq. yd. 8 sq. ft. 5 sq. in.
*8.* 5 A. 155 sq. rd. 8 sq. ft. 140 sq. in.
*9.* 6 lb. 5 ℥ 5 ʒ 1 ℈ 7 gr.
*10.* 171.
*11.* 540.
*12.* 18.
*13.* 720.
*14.* 8 hr.
*15.* 384 nearly.
*16.* 480.

### Exercise 90.

*1.* 21° 17′ 30″.
*2.* 75° 10′ 30″.
*3.* 118° 57′ 15″.
*4.* 142° 59′ 45″.
*5.* 2 hr. 52 min. 40 sec.
*6.* 5 hr. 10 min. 41 sec.
*7.* 48 min. 31 sec.
*8.* 4 hr. 38 min. 14 sec.
*9.* 76° 20′.
*10.* 162° 28′.
*11.* 2 hr. 48 min. 34 sec.; 48 min. 34 sec. past 2 P.M.; 11 min. 26 sec. past 7 A.M.
*12.* 19 sec. past 5 P.M.; 29 min. 41 sec. past 1 P.M.
*13.* 44° 35′ 50″.
*14.* 123° 44″ W.
*15.* 32 min. 59 sec. past 9 A.M.
*16.* 75° 10′ W.
*17.* 44 min. 3 sec. past 6 A.M.; 15 min. 57 sec. past 6 P.M. of day previous.
*18.* 2° 20′.
*19.* 122° 42′ E.
*20.* 137° 4′ 15″; 9 hr. 8 min. 17 sec.
*21.* 82° 23′ 45″ W.
*22.* 18° 3′ 30″ E.

### Exercise 91.

*1.* 280 rd.
*2.* 13 cwt. 33 lb. $5\frac{1}{3}$ oz.
*3.* 10 oz. 13 pwt. 8 gr.
*4.* 5*s.* 11*d.* 1 far.



*5.* 108 da. 3 hr. 33 min. 20 sec.
*6.* 20′ 50″.
*7.* 5 sq. yd. 7 sq. ft. 135 sq. in.
*8.* 2 gal. 1 qt. $1\frac{1}{2}$ gi.
*9.* 8 ℥ 6 ʒ 1 ℈ 4 gr.
*10.* 26 cu. ft. 1080 cu. in.
*11.* 3 pk. 1 pt.
*12.* 137 sq. rd. 28 sq. yd. 1 sq. ft. $68\frac{8}{29}$ sq. in.
*13.* $3\frac{9}{25}$ min.
*14.* $\frac{9}{25}$ pt.
*15.* $28\frac{8}{9}$ sq. in.
*16.* $7\frac{3}{5}$ in.
*17.* $25\frac{1}{2}$ hr.
*18.* $6\frac{1}{5}$ pt.
*19.* $\frac{3}{16}$ da.
*20.* $\frac{57}{64}$ bu.
*21.* $\frac{13}{18}$ lb.
*22.* $\frac{7}{9}$ mi.
*23.* $\frac{8}{27}$ A.
*24.* $\frac{11}{16}$ gal.
*25.* $\frac{24}{25}$ wk.
*26.* $\frac{1809}{5000}$ T.
*27.* 107 rd. 1 yd. 6 in.
*28.* 203 da. 9 hr. 56 min. 30 sec.
*29.* 5 oz. 2 pwt. 22 gr.
*30.* 106 sq. rd. 28 sq. yd. 6 sq. ft.
*31.* 58 sq. rd. 11 sq. yd. 5 sq. ft. $88\frac{1}{2}$ sq. in.
*32.* 34 rd. 3 yd. 1 ft. 8 in.

### Exercise 92.

*1.* 6 da. 3 hr.
*2.* 11 oz. 2 pwt.
*3.* 16 cwt. 64 lb. 12.8 oz.
*4.* 2 pk. 2 qu. .8 pt.
*5.* 269 rd. 2 yd. 1 ft. 3.12 in.
*6.* 67 sq. rd. 20 sq. yd. 5 sq. ft. 18.72 sq. in.
*7.* 6 ℥ 7 ʒ 17.76 gr.
*8.* 29 da. 16 hr. 11 min. 16.8 sec.
*9.* 10 cu. ft. 216 cu. in.
*10.* 14 rd. 3 yd. 2 ft. 10.56 in.
*11.* 14 gal. 1 pt. 1.6 gi.
*12.* 28 sq. rd.
*13.* 2 mo. 4 da. 2 hr. 16 min. 48 sec.
*14.* 45 rd. 11.88 in.
*15.* 3 mo. 21 da. 14 hr. 24 min.
*16.* .1305°+.
*17.* .6401 + mi.
*18.* .8276 + T.
*19.* .2854 lb.
*20.* .0107 + yr.
*21.* .65 bu.

### Exercise 94.

*1.* 66 sq. rd. 9 sq. yd. 3 sq. ft. 33 sq. in.
*2.* 3.6716 w.
*3.* 26 da. 6 hr. 23 min. 42 sec.
*4.* $51.75.
*5.* 1 cu. yd. 5 cu. ft.; $\frac{125}{216}$ oz.
*6.* $16688\frac{4}{7}$ steps.
*7.* 9 hr. 45 min.
*8.* 21 mi. 192 rd.
*9.* $1.96.
*10.* 2 min. 30 sec. past 7 A.M.
*11.* 51 min. 27 sec. past noon.
*12.* $25.95.
*13.* $9\frac{9}{19}$ ℔.
*14.* $317.70.
*15.* $5527.79.
*16.* $\frac{11}{76}$.
*17.* 0.1.
*18.* 4 bu. 3 pk. 7 qt. $1\frac{3}{8}$ pt.
*19.* 45 da. 6 hr. 15 min.
*20.* 66 ft.
*21.* 3 mi. 45 rd. 1 yd. 2 ft. 1.2+ in.
*22.* July 2.
*23.* $50.54+.
*24.* $537\frac{3}{5}$.
*25.* $6\frac{201}{313}$ da.

*26.* 84° 59′ 35″.
*27.* 12 cwt. 84 lb. $1\frac{11}{72}$ oz.
*28.* 70 bbl.
*29.* 1st, £1 1*s.* 5*d.* 2.56 far. 2d, 120 rd. 2 yd. 1 ft. 4.704 in.
*30.* 0.994+ lb.
*31.* 15 sq. ft.
*32.* 495000 cu. ft.
*33.* 97.
*34.* 5 yr. 334 da. 14 hr. 42 min. 45 sec.
*35.* 14 da. 16 hr. $33\frac{3}{4}$ min.
*36.* $3\frac{3}{25}$ ft.
*37.* 1.552+ ft.
*38.* $6\frac{2}{35}$ oz.
*39.* 0.118+ sq. mi.
*40.* 2 yr. 45 da. 1 hr. 25 min. 19.2 sec.
*41.* 41° 3′ 59″.
*42.* $7\frac{4}{5}$ ft.
*43.* $80\frac{2}{3}$ ft.
*44.* $3\frac{3}{11}$ hr.
*45.* 0.58+ mi.
*47.* 1 mi. 279 rd. 2 yd. 1 ft. 11.292 in.
*48.* $12\frac{3}{4}$.
*49.* 128° 14′ 32″. 174° 33′ 11″.
*50.* 1415.5+ yr.; 147.4 yr.

### Exercise 95.

*1.* 10 A.
*2.* 32 A.
*3.* $7\frac{1}{2}$ A.
*4.* $\frac{7}{22}$ A.
*5.* $22\frac{2}{3}$ sq. yd.
*6.* $1\frac{5}{11}$ sq. rd.
*7.* 63 A.
*8.* $25\frac{5}{9}$ sq. yd.
*9.* $1394\frac{10}{11}$ sq. rd.
*10.* 1 A. 106 sq. rd. 20 sq. yd. 1 sq. ft. 72 sq. in.
*11.* 78 A.
*12.* 140 sq. ft.
*13.* 1920 A.; 3200 A.; 320 A.; 240 A.; 336 A.
*14.* 1280 rd.; 960 rd.; 640 rd.
*15.* $23\frac{4}{27}$ sq. yd.
*16.* $1351\frac{1}{8}$ sq. ft.

### Exercise 96.

*1.* 314.16 sq. ft.
*2.* 706.86 sq. ft.
*3.* 235.97 sq. yd.
*4.* 4860.404+ sq. rd.
*5.* 636.174 A.
*6.* 76.7 A. (about).
*7.* 19.7933 A.
*8.* 788.544+ A.
*9.* 13.18+ A.
*10.* .7854 sq. in.; 7.0686 sq. in.

### Exercise 97.

*1.* $95.99. *2.* $1232. *3.* $743.32. *4.* $509.44. *5.* $417.60. *6.* $5632.

### Exercise 98.

*1.* $11.62½. *2.* $84.35. *3.* $26.67. *4.* $385.02.

### Exercise 99.

*1.* 68 yd. *2.* $64\frac{1}{6}$ yd. *3.* 119 yd.; $113\frac{1}{3}$ yd. *4.* $66.38. *5.* Crosswise; $1.08.



### Exercise 100.

*1.* 18 rolls. *2.* $21.60. *3.* $39.60. *4.* $28.44.

### Exercise 101.

*1.* 16; 8.
*2.* 150; $168\frac{3}{4}$.
*3.* 960.
*4.* 3240; 3240; 540.
*5.* $16.20.
*6.* $5.28.
*7.* $86.02.

### Exercise 102.

*1.* 480 cu. in.; $\frac{5}{18}$ cu. ft.
*2.* $9\frac{3}{4}$ cu. yd.
*3.* 506.24 bu.
*4.* 3072 bu.
*5.* 2252.8 bu.
*6.* 3456 bu.
*7.* $36.56.

### Exercise 103.

*1.* $93\frac{5}{77}$ gal.
*2.* $26660\frac{4}{7}$ gal.
*3.* $7899\frac{3}{7}$ gal.
*4.* 69120 gal.
*5.* $67863\frac{3}{11}$ gal.
*6.* $94254\frac{6}{11}$ gal.

### Exercise 104.

*1.* $18\frac{2}{11}$ p.
*2.* 24 p.
*3.* $426\frac{2}{3}$ p.
*4.* $545\frac{5}{11}$ p.
*5.* $155\frac{5}{9}$ cu. yd.
*6.* 39920 cu. yd.
*7.* $16000.
*8.* $2295.
*9.* $1028.36.

### Exercise 105.

*1.* 68740 br.
*2.* $1099.84.
*3.* $1838.59; $1216.
*4.* Cost, $1356.81; Laying, $266.52.
*5.* $81.90.

### Exercise 106.

*1.* $3\frac{2}{19}$ T.; $3\frac{11}{23}$ T. *2.* 56 T. *3.* 1323 T. *4.* $3499.20.

### Exercise 107.

*1.* 28.2744 sq. in., 153.9384 sq. in., 201.0624 sq. ft., 1256.64 sq. rd., .070686 sq. in., 1.76715 sq. yd.
*2.* 302.8125 A.
*3.* Former.
*4.* 484 sq. in.; $\frac{5}{324}$ cu. yd.
*5.* 88 sq. rd., 14 sq. yd.
*6.* 840 cu. in.; 240 cu. in.
*7.* 2880 bd. ft.
*8.* $960.
*9.* $15018\frac{2}{3}$.
*10.* 1012.4 bu. seed; 806.4 bu. potatoes.
*11.* $15600.
*12.* $17.50.
*13.* $18.93.
*14.* $634\frac{2}{3}$.
*15.* $98.10.
*16.* $38.
*17.* 1134.12 sq. ft.
*18.* $108.78.
*19.* $523.15.
*20.* $73.81.

*21.* \$131.27.
*22.* \$273.55.
*23.* $2565\frac{9}{11}$ gal.
*24.* 8355+ lb.
*25.* \$89760.
*26.* 3.96 in.; .0000625.
*27.* \$38.12.
*28.* 1175.21+ bu.; 10940.26 gal.
*29.* \$37.44.
*30.* 273.67 sq. yd.
*31.* 107.42 bu.
*32.* \$4693.33$\frac{1}{3}$.
*33.* 1105.8432 sq. ft.
*34.* \$338.52.
*35.* \$24.35.
*36.* 263.18 lb.
*37.* 239.37 gal.
*38.* 56.55 cu. in.
*39.* $79\frac{3}{16}$ cu. ft.
*40.* $34644\frac{17}{32}$ lb.

### Exercise 108.

*1.* 24 boys.
*2.* 10 days.
*3.* 7 lb.
*4.* \$75.60.
*5.* 45 bu.
*6.* 63.6 tons.
*7.* \$19.50.
*8.* \$3600.
*9.* 27 pupils.
*10.* $5\frac{4}{5}$ days.
*11.* 72 horses.
*12.* \$715.50.
*13.* Former.
*14.* 276 lambs.
*15.* 96 tons.
*16.* 87360 inh.
*17.* \$4060.
*18.* \$7820.
*19.* \$ 170.
*20.* 152 p.
*21.* 210 m.
*22.* 3 ft.
*23.* $\frac{5}{8}$ bu.
*24.* 18 tr.

### Exercise 110.

*1.* 11 books.
*2.* 16 lambs.
*3.* 250 boys.
*4.* 240 lbs.
*5.* $7\frac{1}{5}$ mi.
*6.* 300 da.
*7.* $112\frac{1}{2}$ A.
*8.* 325 yr.
*9.* 348 T.
*10.* 1032 cities.
*11.* \$4.00.
*12.* \$0.51.
*13.* \$4.80.
*14.* \$$30\frac{5}{8}$.
*15.* \$52.50.
*16.* 21000.
*17.* 162 lb.
*18.* \$59.50.
*19.* $\frac{5}{12}$; worth \$$3333\frac{1}{3}$.
*20.* Equal.

### Exercise 113.

*1.* 20%.
*2.* 35%.
*3.* $37\frac{1}{2}$%.
*4.* 8%.
*5.* $7\frac{1}{4}$%.
*6.* $232\frac{1}{7}$%.
*7.* $87\frac{1}{2}$%.
*8.* $2\frac{1}{2}$%.
*9.* $12\frac{1}{2}$% gain.
*10.* 70% gain.
*11.* 100% gain.
*12.* $33\frac{1}{3}$%; 75%; $62\frac{1}{2}$%.
*13.* $7\frac{2}{5}$%.
*14.* 8%.
*15.* 18%.
*16.* $37\frac{1}{2}$%.
*17.* 25% gain.
*18.* $3\frac{1}{5}$% gain.
*19.* $10\frac{1}{2}$% gain.
*20.* 80% gain.
*21.* $33\frac{1}{3}$% gain.
*22.* 25% gain.
*23.* 14% gain.
*24.* $41\frac{1}{2}$% loss.
*25.* 16% loss.
*26.* $\frac{1}{2}$%.
*27.* 0.67+ %.
*28.* 0.75+ %.
*29.* $0.8\frac{1}{3}$%.
*30.* $0.5\frac{5}{7}$%.
*31.* $0.5\frac{5}{9}$%.
*32.* 60%.
*33.* $66\frac{2}{3}$%.
*34.* 30%.
*35.* 36%.
*36.* $66\frac{2}{3}$%.
*37.* 80%.
*38.* $83\frac{1}{3}$%.
*39.* $87\frac{1}{2}$%.
*40.* 5%.
*41.* 55% boys.
*42.* 85%.
*43.* 24%.
*44.* 85%.
*45.* $72\frac{9}{16}$%.
*46.* 16% gain.
*47.* 20% gain.
*48.* Newsp., $33\frac{1}{3}$%.
*49.* Cattle; 80%.



### Exercise 114.

*1.* \$2000.
*2.* 15200 bu.
*3.* 4600 gal.
*4.* 13750 da.
*5.* \$15800.
*6.* \$121.
*7.* \$970.
*8.* $28\frac{3}{4}$ T.
*9.* \$521.
*10.* \$316.
*11.* 1750.
*12.* 5200.
*13.* 600.
*14.* 2000.
*15.* 2900.
*16.* 1620.
*17.* 175.
*18.* 340.
*19.* 240 bu.
*20.* 300 da.
*21.* 2900 T.
*22.* $167\frac{1}{2}$ mi.
*23.* \$489.
*24.* \$3075.
*25.* 776.
*26.* $184\frac{1}{4}$.
*27.* 1144.
*28.* $1285\frac{5}{7}$.
*29.* 3800.
*30.* $8333\frac{1}{3}$.
*31.* \$50.
*32.* \$346.
*33.* $7\frac{1}{2}$.
*34.* \$9.60.
*35.* \$85.86.
*36.* 1.07325.
*37.* 128.
*38.* 250 da.
*39.* \$234.
*40.* $91\frac{4}{5}$.
*41.* $8\frac{1}{3}$ mi.
*42.* $2\frac{1}{2}$.
*43.* \$40.
*44.* \$284.
*45.* \$10.71.
*46.* \$315.
*47.* 67500.
*48.* \$2000.
*49.* 75 lb.; 108 lb.
*50.* 5¢.
*51.* 30¢.
*52.* 900 lambs.
*53.* 128 yd.
*54.* Lost \$5.00.
*55.* 568 mi.
*56.* \$198.
*57.* \$95.50.
*58.* \$15700.

### Exercise 116.

*1.* 101.92 ft.; \$24.619; $0.65\frac{1}{3}$.
*2.* $66\frac{2}{3}$%; $37\frac{1}{2}$%; 5%; $133\frac{1}{3}$%.
*3.* 60%; 25%; 125%; $166\frac{2}{3}$%.
*4.* 700; 525; 200.
*5.* $266\frac{2}{3}$; 144; 40.
*6.* 64.96 A.; 7.511 mi.
*7.* $14\frac{1}{2}$%.
*8.* \$58.40.
*9.* $17.17\frac{1}{3}$ lb.
*10.* 15%.
*11.* \$71000.
*12.* \$5.75.
*13.* 125%.
*14.* 711.40.
*15.* \$866.88.
*16.* $1\frac{2}{3}$%; $12\frac{1}{2}$%; $14\frac{2}{7}$%; 25%; $8\frac{1}{3}$%; $53\frac{1}{3}$%; $2\frac{2}{9}$%; $4\frac{1}{6}$%.
*17.* $83\frac{1}{3}$%.
*18.* \$36800.
*19.* Increased 10.08 A. or 96%.
*20.* $36\frac{1}{2}$% gain.
*21.* 20%; 25%; 50%.
*22.* \$40000.
*23.* $47\frac{1}{2}$%.
*24.* \$2917.70.
*25.* .45; 1; 43.78; $\frac{1}{250}$.
*26.* 6; 33.2; $\frac{3}{500}$; $\frac{4}{375}$.
*29.* 92%.
*30.* \$262.50.
*31.* 25%.
*32.* \$1080.
*33.* \$75400.
*34.* 632.
*35.* $16\frac{2}{3}$% gain.
*36.* 14.208%; 14.247%.

### Exercise 117.

*1.* 25%.
*2.* \$50.
*3.* \$900 cost.
*4.* \$2015.
*5.* Gained $6\frac{2}{3}$%.
*6.* James; \$40; 20%.
*7.* 30% loss.
*8.* Gained \$135.

9. Gained \$.30; $3\frac{3}{4}$%.
10. \$1.80.
11. Lost \$32; 16%.
12. \$1.14; \$1.20.
13. \$3.20.
14. \$420.

### Exercise 119.

1. \$83.19.
2. \$5982.30.
3. \$1558.49.
4. Latter; \$499.20.
5. 32%.
6. \$430.92.

### Exercise 120.

1. \$2.40; \$77.60.
2. \$12062.50.
3. 5%.
4. $3\frac{1}{2}$%.
5. \$2335.
6. \$2760.
7. \$223.59.
8. \$2341.50.
9. 278 b.
10. \$18.75.
11. \$3459.
12. \$3027.
13. \$3475.50.
14. \$10102.50.
15. 50 sh.

### Exercise 121.

1. \$31.50; \$45.90; \$54.
2. \$253.50.
3. \$12.53; \$26.78; \$30.98; \$81.09; \$15.12; \$200.
4. .018.
5. .025.
6. \$22356.
7. .0085.
8. \$235.20.
10. Take $\frac{2}{3}$ of the results of example 3.

### Exercise 122.

1. \$72.80.
2. \$198.80.
3. \$105.
4. \$486.52.
5. \$881.25; \$1092.75 \$1311.30.
6. 18%.
7. \$3.894.

### Exercise 123.

1. \$112.95; \$125.50.
2. \$12540; \$540.
3. \$156.
4. \$6122.45.
5. .0175.
6. \$9846.
7. $.00\frac{31}{48}$.
8. \$69600; \$5400.

### Exercise 124.

1. \$62.50; $4\frac{1}{6}$%.
2. First, $5\frac{5}{8}$%; Second, $5\frac{5}{8}$%.
3. First, $5\frac{2}{5}$ + %; Second, 6 + %.
4. \$25200.
5. \$60750.

### Exercise 125.

1. \$31.
2. $16\frac{2}{3}$%.
3. \$39200.
4. \$5240.
5. $2\frac{1}{3}$%.
6. Lost; \$6.25; 4%.
7. $33\frac{1}{3}$%; 50%.
8. \$11400.
9. \$15345.



10. \$49.60.
11. \$17384.14.
12. 8%.
13. \$144.80.
14. $15\frac{5}{173}$%.
15. \$77.
16. 50%.
17. 28%.
18. Lost; 4%.
19. \$38.08.
20. \$1200.
21. $\$2733\frac{1}{3}$.
22. 50%.
23. 675.
24. 558 bu.
25. \$715.
26. \$30.50.
27. First; $4\frac{2}{3}$%.
28. Lad; 25%.
29. 12%.
30. $3\frac{2}{5}$% or \$21.76.
31. \$3000.
32. $16\frac{2}{3}$%.
33. 28 bu.; $7\frac{1}{4}$%.
34. Lost; \$5; 4%.
35. $88\frac{9}{10}$%; $11\frac{1}{10}$%; $12\frac{1}{2}$ − %.
36. $6\frac{1}{4}$%.
37. $13\frac{1}{3}$% (about).
38. $44\frac{4}{9}$%.
39. \$1140.
40. Com. was $2\frac{1}{2}$%.
41. Com. was 3%.
42. \$2000.
43. $37\frac{1}{2}$%; $81\frac{1}{4}$%.
44. \$1.65.
45. 28%.
46. $19\frac{4}{5}$.
47. $23\frac{2}{11}$%.
48. 20%.
49. \$1664; \$4736.
50. $16\frac{2}{3}$%; 70%; $43\frac{3}{4}$%; $22\frac{1}{3}$%; $\frac{1}{3}$%; $32\frac{1}{2}$%; $166\frac{2}{3}$%; 450%.
51. $\frac{3}{400} = .0075$; $\frac{9}{1000} = .009$; $\frac{15}{200} = .075$. $3\frac{2}{5} = 3.4$, etc.
52. 40%.
53. 1680 T.
54. The advance; 20%.
55. $66\frac{2}{3}$%.
56. 40%.
57. \$168; $5\frac{85}{193}$%.
58. \$8500.
59. \$7500.
60. 1504 shares and \$8 over.
61. 233 sh.; \$58.25; \$4077.50.
62. 64% boys.
63. $33\frac{1}{3}$%.
64. $40\frac{10}{11}$%.
65. \$24.50.
66. \$5600.
67. \$30.
68. 25.51%.
69. \$55; 15+ %.

### Exercise 126.

1. \$76.50.
2. \$60.50.
3. \$123.60.
4. \$19.53.
5. \$91.21.
6. \$1265.75.
7. \$82.77.
8. \$5.76.
9. \$709.50.
10. \$90.36.
11. \$1612.05.
12. \$236.78.

### Exercise 128.

1. \$42.64.
2. \$81.75.
3. \$332.76.
4. \$406.55.
5. \$68.15.
6. \$25.68.
7. \$617.97.
8. \$438.86.
9. \$444.85.
10. \$19.10.
11. \$84.25.
12. \$34.46.
13. \$3403.13.
14. \$10848.19.
15. \$6457.24.
17. \$2854.52.
18. \$3734.45.
19. \$5.84.
20. \$0.73.

### Exercise 129.

1. \$11.20.
2. \$46.80.
3. \$8.58.
4. \$27.07.
5. \$85.58.
6. \$194.78.
7. \$67.85.
8. \$27.71.
9. \$1.74.
10. \$.63.
11. \$1633.40.
12. $\frac{72}{73}$.

### Exercise 130.

*1.* 5%.
*2.* 4%.
*3.* 6%.
*4.* 7%.
*5.* $4\frac{1}{2}$%.
*6.* 6%.
*7.* 3%.
*8.* 4%.
*9.* $5\frac{1}{2}$%.
*10.* 6%.
*11.* 4%.
*12.* $5\frac{1}{2}$%.
*13.* $3\frac{1}{2}$%.

### Exercise 131.

*1.* 3 yr. 6 mo.
*2.* 5 yr. 3 mo.
*3.* 1 yr. 9 mo.
*4.* 2 yr. 10 mo.
*5.* 8 yr. 4 mo.
*6.* 3 yr. 2 mo. 15 da.
*7.* 5 yr. 8 mo. 20 da.
*8.* 7 yr. 6 mo. 24 da.
*9.* 3 yr. 3 mo. 10 da.
*10.* 2 yr. 9 mo. 18 da.
*11.* 9 yr. 10 mo. 12 da.
*12.* 5 yr. 7 mo. 25 da.

### Exercise 132.

*1.* $460.
*2.* $78.40.
*3.* $55.
*4.* $288.
*5.* $416.
*6.* $25.20.
*7.* $82.
*8.* $151.20.
*9.* $95.
*10.* $216.

### Exercise 133.

*1.* $375; $3.75. *2.* $4240; $137.80. *3.* $7800; $455. *4.* $1440.

### Exercise 134.

*1.* 5%.
*2.* $97.50.
*3.* 9 yr. 5 mo. 15 da.
*4.* $104.
*5.* 6 yr. 7 mo.
*6.* $3\frac{2}{3}$%.
*7.* $765.55.
$760.09+.
$771.08.
*8.* $312.65.
*9.* 25 yr.
20 yr.
$16\frac{2}{3}$ yr.
$14\frac{2}{7}$ yr.
$12\frac{1}{2}$ yr.
*10.* 1 yr. 3 mo. 24 da.
*11.* 8%.
*12.* $2684.92.
*13.* $294.66.
*14.* 5%.
*15.* $491.96.
*16.* 14%.
*17.* 3 yr. 6 mo.
*18.* $1008.
*19.* $478.79.
*20.* 2 yr. 10 mo. 9 da.

### Exercise 135.

*1.* Aug. 7, 1901; $366.
*2.* Aug. 8, 1893; $963.05.
*3.* Jan. 6, 1898; $706.13.
*4.* June 14, 1900; $536.22.
*5.* $3106.37.
*6.* $549.65.
*7.* $2838.50.
*8.* $6830.16.
*9.* $100.83.
*10.* $1707.58.
*11.* $4430.74.
*12.* $13402.84.

### Exercise 136.

*1.* $288.94.
*2.* $682.71.
*3.* $997.89.
*4.* $566.22.
*5.* $2015.52.



### Exercise 137.

*1.* $363. *2.* $1325.35. *3.* $422.98.

### Exercise 138.

*1.* $1179; $1176.
*2.* $13.05; $13.49.
*3.* $790.67.
*4.* $14.73; $635.27.
*5.* $1386.10.
*6.* $5012.97.
*7.* Sept. 1, 1895; 48 da.; $12.80; $1587.20.
*8.* May 25, 1897; 54 da.; $21.32; $2009.68.
*9.* 3 mo. 9 da.; $15.94; $875.81.
*10.* 2 mo. 27 da.; $20.61; $1197.84.
*11.* Mar. 18, 1896; 79 da.; $23.88; $1790.07.
*12.* T. D. = $74.47; B. D. = $87.50.
*13.* $467.92.
*14.* $2312.90.

### Exercise 139.

*1.* $900. *2.* $3620. *3.* $75000. *4.* $833.33.

### Exercise 140.

*1.* $53.88.
*2.* $477.57.
*3.* $174.65.
*4.* $148.51.
*5.* $393.89.
*6.* $106.16.
*7.* $579.77.
*8.* $895.75.
*9.* $60.14.
*10.* $854.80; $821.90; $863.

### Exercise 141.

*1.* $110.25; $810.25.
*2.* $259.20; $1459.20.
*3.* $13.26; $103.26.
*4.* $28.28; $153.28.
*5.* $138.80; $888.80.
*6.* $.46.
*7.* 1st = 2d = $1560; $1793.27; $1776.

### Exercise 142.

*1.* $902.25.
*2.* $2496.87.
*3.* $7619.
*4.* $99875.
*5.* $568.58.
*6.* $2971.25.
*7.* $2394.
*9.* $2490.66.
*10.* $1671.60.
*11.* $448.87+.

### Exercise 143.

*1.* $10957.50.
*2.* $30649.50.
*3.* £2750.
*4.* 11922.63 fr.
*5.* £1604.
*6.* $659.87.
*7.* $2740.79.
*8.* $1759.04.
*9.* $315.88.
*10.* 41680 fr.
*11.* 33160.62 mk.

### Exercise 144.

*1.* 6 mo. 15 da. (about).
*2.* 6 mo. 23 da.
*3.* April 24.
*4.* Oct. 17.
*5.* 7 mo. 3 da.
*6.* 62 da.; Dec. 18.
*7.* 8 mo. 25 da.
*8.* Nov. 1.
*9.* Aug. 29.
*10.* 11 mo. 20 da.
*11.* 11 mo. 23 da.
*12.* 22 mo. 2 da.
*13.* 7 mo. 16 da.

### Exercise 145.

*1.* $\frac{2}{7}$.
*2.* $\frac{3}{5}$.
*3.* $\frac{21}{32}$.
*4.* $\frac{10}{11}$.
*5.* $\frac{2}{3}$.
*6.* $\frac{21}{25}$.
*7.* $\frac{5}{7}$.
*8.* $\frac{15}{19}$.
*9.* $\frac{1711}{1880}$.
*10.* $\frac{2}{5}$.
*11.* 45.
*12.* 3.
*13.* 77.
*14.* 36.
*15.* 98.
*16.* $17\frac{1}{16}$.
*17.* $9\frac{1}{6}$.
*18.* $6\frac{77}{180}$.
*19.* $\frac{7}{9}$.
*20.* $22\frac{2}{25}$.

### Exercise 146.

*1.* 16.
*2.* 96.
*3.* 48.
*4.* 10.
*5.* $4\frac{2}{3}$.
*6.* $12\frac{1}{4}$.
*7.* $48\frac{13}{19}$.
*8.* $11\frac{2}{3}$.
*9.* $12.42\frac{3}{16}$.
*10.* 2.85.
*11.* $11877.60.
*12.* 500 A.
*13.* $771\frac{3}{7}$ A.
*14.* 63 ft.
*15.* $133\frac{1}{3}$ ft.
*16.* $26\frac{2}{3}$ bu.
*17.* $135.
*18.* $97.01.
*19.* 8 da.
*20.* 30 da.
*21.* 16 men.
*22.* $1\frac{1}{2}$ yr.
*23.* $5000.
*24.* $3.
*25.* 51.
*26.* $24\frac{1}{2}$.
*27.* $6\frac{2}{5}$.
*28.* .0245+.
*29.* $23\frac{3}{5}$ hr.

### Exercise 147.

*1.* $840.
*2.* $84\frac{3}{8}$ q.
*3.* $2820.
*4.* $7612\frac{1}{2}$ lb.
*5.* 14 da.
*6.* 384 bbl.
*7.* 55 da.
*8.* $58\frac{1}{3}$ da.
*9.* $2133\frac{1}{3}$ ft.
*10.* 400 lb.
*11.* $4\frac{4}{9}$ ft.
*12.* 108 men.

### Exercise 148.

*1.* 3125, 4375, 5000, 7500.
*2.* 525, 875, 1925, 2975.
*3.* 5300, 10600, 15900.
*4.* 552, 828, 1104, 1380.
*5.* 550, 650, 800.
*6.* $12750, $15000, $18750.
*7.* $54\frac{18}{23}$, $73\frac{1}{23}$, $82\frac{4}{23}$.

### Exercise 149.

*1.* $4.20, $5.40, $7.80.
*2.* $1600, $2050, $850.
*3.* $140, $160, $200.
*4.* $9600, $7200, $3200.
*5.* $640, $1420, $1240.
*6.* $5000, $4000, $3000.
*7.* $240, $200, $135.
*8.* $280, $192, $288.
*9.* $12.60, $18, $18.90.
*10.* $2700, $1620, $3780.

### Exercise 151.

*1.* 676.
*2.* 21952.
*3.* 12769.
*4.* 262144.
*5.* 8615125.
*6.* 3.0625.
*7.* 12326.391.
*8.* 985.96.



*9.* .000054872.
*10.* .287496.
*11.* $2\frac{19}{27}$.
*12.* $12\frac{1}{4}$.
*13.* $181\frac{26}{27}$.
*14.* $76\frac{49}{64}$.
*15.* $364\frac{148}{343}$.
*16.* 50625.
*17.* 279841.
*18.* 24414.0625.
*19.* $31\frac{163}{216}$.
*20.* $1\frac{4921}{64000}$.
*21.* 432.
*22.* 1024.
*23.* $31\frac{1}{4}$.
*24.* 18.
*25.* $3\frac{6}{7}$.
*26.* $76\frac{9}{16}$.
*27.* 6834375.
*28.* $\frac{3}{25}$.
*29.* 21870.

### Exercise 152.

*1.* 26.
*2.* 29.
*3.* 31.
*4.* 42.
*5.* 58.
*6.* 67.
*7.* 83.
*8.* 136.
*9.* 417.
*10.* 843.
*11.* 938.
*12.* 7403.
*13.* 8017.
*14.* 9091.
*15.* 9807.
*16.* 35047.
*17.* 46708.
*18.* 73594.
*19.* 7.86.
*20.* 83.4.
*21.* .907.
*22.* 1.324.
*23.* 37.68
*24.* .7118.
*25.* 3.4171.
*26.* 418.75.
*27.* 5.0809.
*28.* 6.324.
*29.* 2.828.
*30.* 5.567.
*31.* 4.147.
*32.* 3.674.
*33.* .948.
*34.* .866.
*35.* .836.
*36.* 2.291.
*37.* 1.825.
*38.* 15.684.
*39.* 5.479.
*40.* 2.723.
*41.* 5.1079.
*42.* 6.013.
*43.* 10.005.

### Exercise 154.

*1.* 27.
*2.* 46.
*3.* 58.
*4.* 63.
*5.* 84.
*6.* 124.
*7.* 317.
*8.* 538.
*9.* 493.
*10.* 682.
*11.* 719.
*12.* 926.
*13.* 4.85.
*14.* .647.
*15.* 78.7.
*16.* 8.09.
*17.* .918.
*18.* 180.7.
*19.* 2.419.
*20.* 30.68.
*21.* 5.703.
*22.* .7908.
*23.* 1.817.
*24.* 2.289.
*25.* 3.072.
*26.* 1.650.
*27.* 4.641.
*28.* 2.683.
*29.* 4.319.
*30.* 3.036.
*31.* 4.013.
*32.* 8.004.
*33.* 3.715.
*34.* 2.180.

### Exercise 156.

*1.* 24.
*2.* 36.
*3.* 42.
*4.* 48.
*5.* 63.
*6.* 75.
*7.* 96.
*8.* 135.
*9.* 162.

### Exercise 157.

*1.* 24.
*2.* 47.
*3.* 83.
*4.* 95.
*5.* 186.
*6.* 328.
*7.* 23.
*8.* 36.
*9.* 1.76.
*10.* 1.95.
*11.* 2.06.
*12.* 2.15.
*13.* 2.09.
*14.* 2.71.
*15.* 4.03.
*16.* 1.03.
*17.* 2.56.
*18.* 1.28.
*19.* 1.96.
*20.* 1.78.
*21.* 6.96.
*22.* 2.660, .841, 2.018.
*23.* .622, .196, .087.
*24.* .968, .306, .027.
*25.* 1.84, .85, .42.
*26.* .41, .19, 2.66.
*27.* 1.13, .77, .54.

### Exercise 158.

*1.* 17.
*2.* 12.
*3.* 20.
*4.* 53.
*5.* 15.
*6.* 48.
*7.* 145.
*8.* 451.
*9.* 952.
*10.* 9.4339.
*11.* 10.816.
*12.* 26.324.
*13.* 112.645.
*14.* 43.9824.
*15.* 144.5136.
*16.* 53.4072.
*17.* 41.888.
*18.* 468.7267.
*19.* 551.0366.
*20.* 12.732.
*21.* 119.36.
*22.* 18.207.
*23.* 33.04.
*24.* 24 ft.
*25.* 205 rd.
*26.* 81 ft.
*27.* 40 ft.
*28.* 96 ft.
*29.* 26.7036 in.
*30.* 24881 mi.
*31.* 381.72 ft.

### Exercise 159.

*1.* 280 sq. ft.
*2.* 852 sq. ft.
*3.* 200 sq. yd.
*4.* 35 A.
*5.* 39 sq. in.
*6.* 135 sq. in.
*7.* $163\frac{7}{11}$ sq. rd.
*8.* $337\frac{1}{2}$ sq. yd.
*9.* 340 A.
*10.* 113.0976 sq. in.
*11.* 78.54 sq. rd.
*12.* 509.29 sq. ft.
*13.* 36 sq. in.
*14.* 90 sq. ft.
*15.* 180 sq. yd.
*16.* 306 sq. rd.
*17.* 756 sq. mi.
*18.* 10.82 sq. in.
*19.* 2771.2 sq. rd.
*20.* 414.691 sq. ft.
*21.* 7.245 A.
*22.* $79200.
*23.* $4908.75.
*24.* (*a*) 1392 sq. ft.
(*b*) 30 ft.
(*c*) 11784 sq. ft.

### Exercise 160.

*1.* 120 sq. in.
*2.* 48 sq. ft.
*3.* 150 sq. in.
*4.* $997\frac{1}{2}$ sq. ft.
*5.* 132 sq. ft.
*6.* 131.95 sq. ft.
*7.* 1005.31 sq. ft.
*8.* 2764.608 sq. yd.
*9.* 4.7124 sq. ft.
*10.* 1507.968 sq. in.
*11.* 113.9976 sq. ft.
*12.* 1134.1176 sq. in.
*13.* $291.60.
*14.* $55.85.
*15.* $395.84.
*16.* 148.925 sq. ft.

### Exercise 161.

*1.* 120 cu. ft.
*2.* 720 cu. ft.
*3.* $2338\frac{1}{3}$ cu. ft.
*4.* 1728 cu. in.; 2197 cu. in.
*5.* 300 cu. ft.
*6.* $186\frac{2}{3}$ cu. yd.
*7.* 17.6715 cu. ft.
*8.* 530.145 cu. in.
*9.* 523.6 cu. in.; 1436.758 cu. ft.
*10.* 696.9116 cu. in.
*11.* 366 cu. ft.
*12.* 929.914 cu. ft.
*13.* 47001.6 gal.
*14.* 17.4097 cu. in.
*15.* 30.4896 cu. in.
*16.* 163.405 cu. ft.; 153.938 sq. ft.
*17.* 240000 drops.
*18.* 8.45 in.; 12.32 in.
*19.* 3.94 ft.
*20.* 378.675 bu.
*21.* 207.84 cu. ft.; 40.037 ft.; 360.333 sq. ft.



### Exercise 162.

*1.* 194.4 sq. in.
*2.* $21\frac{1}{3}$ in.
*3.* 759.5 sq. ft.
*4.* 153.94 sq. in.
*5.* 275 sq. ft.
*6.* 175.5 cu. in.
*7.* 2143.75 cu. ft.
*8.* 4 : 9; 27 : 125.
*9.* 7 : 9; 49 : 81; 343 : 729.
*10.* Four times as much; eight times as much.
*11.* 4 in.
*12.* $6\frac{12}{13}$ ft.
*13.* 1012.5 yd.; 37.5 yd.
*14.* $1000.
*15.* 1 : 121; 1 : 1331.
*16.* 10.09 rd.
*17.* 1 : 2; $1 : \sqrt[3]{4}$.
*18.* $\$7\frac{1}{9}$.
*19.* $\$2\frac{2}{3}$.
*20.* 194.74 lb.

### Exercise 168.

*1.* = 73240 dm. = 732.4 Dm. = 732400 cm.
*2.* = .3608 Kg. = 36080 cg. = 3608 dg.
*3.* = 7124500 sq. cm. = .071245 sq. Hm. = .071245 Ha.
*4.* = 50321.7 ml. = 5.03217 Dl. = .0503217 Kl.
*5.* = .0055171 Ha. = .55171 a. = .55171 sq. Dm.
*6.* = 25000 cu. cm. = 25 l. = .25 dst.
*7.* = 53 dst. = 5300 cu. dm. = 5.3 st.
*8.* = 1234.5 Dm. = 123450 dm. = 12345000 mm.
*9.* = 3.2671 Dg. = .032671 Kg. = 32671 mg.
*10.* = 10673 ml. = 1.0673 Dl. = .010673 Kl.
*11.* = .0000083 cu. m. = .0083 l. = 8300 cu. mm.
*12.* = .4671 cu. m. = 467100 cu. cm. = 4671 dl.
*13.* = 50070000 mg. = 500700 dg. = 50.07 Kg.
*14.* = 3.755 Ha. = 37550 ca. = 375.5 sq. Dm.
*15.* = 4000 a. = 400000 sq. m. = 400000 ca. = 4000 sq. Dm.
*16.* = 34575 cm. = 3.4575 Hm. = .34575 Km. = 345750 mm.
*17.* = 86.32 sq. m. = .008632 Ha. = .8632 sq. Dm.
*18.* = 38500 cl. = .385 cu. m. = .000000000385 cu. Km.
*19.* 75 Kg.; 1000 Kg.; 1.7 Kg.; 3.5 Kg.; 11000 Kg.
*20.* 75 l.; 5000 l.; .03 l.; .587 l.; 1.3875 l.
*21.* = 4230 dl. = 423000 cu. cm. = 423 cu. m.
423000 g. = 423 Kg.

### Exercise 169.

*1.* 96.05 m.
*2.* 16.2 a.
*3.* 50.6090003 cu. m.
*4.* 1458.6061 g.
*5.* 3242.405 l.
*6.* 8071.97 a.
*7.* 1906.233 m.
*8.* 7178.22661 g.
*9.* 30.917389128 cu. m.
*10.* 11356.212 l.
*11.* 380.827 l.
*12.* 226385 sq. m.

*13.* 79.927 m.
*14.* 41.691 l.
*15.* 899.943 sq. m.
*16.* 2534.43 g.
*17.* 7547.362 m.
*18.* 7284.654 l.
*19.* 57307.924375 l.
*20.* 175.2 m.
*21.* 256227.3 g.
*22.* 133.817 m.
*23.* 163000 g.
*24.* 1154.56 Ha.
*25.* 64.592 Hl. = 6.4592 cu. m.
*26.* .755 sq. m.
*27.* 642600 sq. m.
*28.* 2.7 sq. m.
*29.* 21.12 sq. m.
*30.* .2.
*31.* 9000.
*32.* 2000000000.
*33.* .000000154.
*34.* 3409.013 m.
*35.* 1626.13 a.
*36.* 1156.01612 g.
*37.* 1600 m.; 2153.43+ m.
*38.* 31.212 cu. m.
*39.* 120 l.
*40.* 955080 Kg.
*41.* 36 Kl.; 36000 Kg.
*42.* $\frac{3}{8}$ m.
*43.* 74.88 Kl.
*44.* 666 Hl. = 66.6 st.
*45.* $2238.60.
*46.* 1011.84 cu. m. = 1011.84 st. = 1011840 l.; 1011840 Kg.; 10118.4 Hl.
*47.* 8 l.
*48.* $\frac{1}{4}$ m.
*49.* 56700 Kg.
*50.* 1436.4 st. = 1436400 l. = 1436.4 Kl.
*51.* 1436400 Kg.
*52.* 2585520 Kg.
*53.* $34473.60.
*54.* 7.736 a.
*55.* 11.28 m.
*56.* $1\frac{1}{2}$%.
*57.* 85.1%; 42.55 Kg.; 1050 cu. cm.
*58.* .00025 cu. m.
*59.* 1.346 m.

### Exercise 170.

[These reductions can be only approximate.]

*1.* 8.045 Km.
*2.* 4.58 Hl.
*3.* 22.66 Ha.
*4.* 170.33 l.
*5.* 72.48 st.
*6.* 9.938 cu. m.
*7.* 27.22 Kg.
*8.* 141.88 bu.
*9.* 497.12 rd.
*10.* 98.425 ft.
*11.* 8.83 cd.
*12.* 10.5 A.
*13.* 33.296 gal.
*14.* 36.89 pk.
*15.* 2.205 cwt.
*16.* 1135.04 bu.
*17.* 255.38 bu.
*18.* 3.621 Hm.
*19.* 11340 g.
*20.* 176.58 cu. ft.
*21.* 375.59 sq. rd.
*22.* 7257.6 Kg.
*23.* .7946 pk.
*24.* 6.653 cu. in.
*25.* 430.56 sq. ft.
*26.* 1135.56 dl.
*27.* 478.4 sq. yd.
*28.* .63 in.
*29.* .1544 pt.
*30.* 2034.54 cl.
*31.* 3.44 Km.
*32.* 1.707 Hl.
*33.* 13.72 l.
*34.* 16.44 Ha.
*35.* 3420.14 Kg.
*36.* 18 A. 97 sq. rd. 1.8 sq. yd.
*37.* 51 bu. 3 pk. 7.5 qt.
*38.* 8 T. 5 cwt. 96 lb. 3.7 oz.
*39.* 23 gal. 1 pt. .2 gi.
*40.* 15 mi. 22 rd. 1.06 ft.
*41.* 37.48 lb.
*42.* 30.864 T.
*43.* 6.614 T.
*44.* 3785.2 Kg.



*45.* 191125 Hg.
*46.* 16.4 g.
*47.* 11772 cu. yd.
*48.* 8884.5 T.
*49.* 12.6 in.
*50.* 3.39 dm.
*51.* $32.25.
*52.* 322.7 Hl.
*53.* 1.186 A.
*54.* 2048.07 lb.
*55.* 62.46 lb.
*56.* 22.35 m.
*58.* 119.234 Kg.
*59.* 1616628 Kg.
*60.* 8040.2 rev.
*62.* 199.5 l.; 403.9 lb.
*63.* 11.416 qt. (milk); 9.81 qt. (corn).
*64.* $106.84.
*65.* $162.52; 50+ %.
*66.* 9116.6 gal.
*67.* $3736.15.
*68.* Gained; nearly 24%.
*69.* 7.457 mi.
*70.* 38.016 Km.; 23.623 mi.
*71.* $84.56.
*72.* 10.43 l.
*73.* 4.584 Ha.
*74.* (*a*) 145800 l.
(*b*) 160.72 T.
(*c*) 38527.65 gal.
(*d*) 4137.22 bu.
(*e*) 145.8 st.
(*f*) 1.674 a.
(*g*) 12.68 rd.

### Exercise 171.

*1.* 330 kg. = 727.52 lb.
*2.* .0018 cu. m. = .06357 cu. ft.
*3.* 298.94 T.
*4.* 1.38 cu. ft.
*5.* 1190.4 m. tons.
*6.* 15901.86 Kg.
*7.* 47 cu. dm. = 2868.034 cu. in.
*8.* 42.86 cu. dm.
*9.* 15648.25 lb.
*10.* 6.7 (nearly).
*11.* 8.88.
*12.* .3 (nearly).
*13.* .75.
*14.* 1.3.
*15.* 3.78.
*16.* .98.
*17.* 10.48.
*18.* .0013.
*19.* (*a*) W't = sp. gr. × w't same volume water.
(*b*) Sp. gr. = w't ÷ w't same volume water.
(*c*) W't same volume water = w't ÷ sp. gr.
Volume water can be found if its weight is known.
*20.* 9 cu. m.
*21.* 8.283 l.
*22.* .758.
*23.* 851.7 g.
*24.* 25.632 g.
*25.* 2886+ coins.
*26.* 7.6+ l.
*27.* 8680.6 lb.
*28.* 1.236 Kg.
*29.* 4588.5 Kg.
*30.* .0019; 1.9 Kg.
*31.* .0516 a.
*32.* 28700 Kg.
*33.* $\frac{3}{100}$%.
*34.* 9.756 dm.
*35.* 3.5 kg.; $42\frac{6}{7}$%.
*36.* 316.128 cu. in.
*37.* 235.35 Kg.
*38.* 4.7 m.
*39.* 66.679 Kg.; 7200 Kg.
*40.* 2.5 dm.

### Exercise 172.

*1.* 9.309 gal.
*2.* 11.5.
*3.* 2 yr. 169 da. 6 hr. $43\frac{1}{3}$ sec.
*4.* 57.
*5.* 88 sq. rd. 26 sq. yd. 8 sq. ft.
*6.* 3.6.
*7.* $2\frac{49}{120}$.
*8.* 14975.
*9.* $7.86$\frac{3}{4}$.
*10.* $32.85.
*11.* $273$\frac{1}{3}$.
*12.* $30\frac{10}{13}$%.
*13.* 43; 73788.

*14.* 20 books.
*15.* $3\frac{3}{5}$ da.
*16.* $\frac{66}{72}$; $\frac{31}{72}$; $\frac{64}{72}$; $\frac{56}{72}$; $\frac{225}{72}$; $\frac{27}{72}$; $\frac{22}{72}$; $\frac{64}{72}$.
*17.* Increased, $\frac{27}{400}$.
*18.* $\frac{19}{30}$.
*19.* $7\frac{3}{5}$ bu.
*20.* $4.
*21.* $17\frac{1}{2}$ da.
*22.* 55396 min.
*23.* $120.
*24.* $64\frac{11}{28}$.
*25.* $1\frac{19}{31}$.
*26.* 42.
*27.* 6 T. 7.5 cwt.
*28.* $286.
*29.* 1.008.
*30.* 5 mi. 55 rd. 2 yd. 2 ft. 6.96 in.
*31.* The former.
*32.* 1984 bu.
*33.* $5\frac{1}{7}$ da.
*34.* $532\frac{52}{119}$ times.
*35.* $18492.
*36.* $17.10\frac{1}{2}$%.
*37.* $114\frac{2}{7}$ gal.
*38.* 12.276 bu.
*39.* 507064 in.
*40.* $167.41.
*42.* 5%.
*43.* 8 hr. 2 min. 22 sec.
*44.* $13\frac{1}{3}$%.
*45.* $5280.
*46.* $130.87.
*47.* 31116 rails.
*48.* $936.
*49.* Most, Saturday; least, Thursday.
*50.* A, $\frac{5}{21}$; B, $\frac{4}{21}$; C, $\frac{19}{63}$; D, $\frac{8}{63}$.
*51.* $69\frac{1}{3}$.
*52.* $1\frac{5}{8}$.
*53.* 17 mi. 616 ft.
*54.* $39\frac{11}{36}$ acres; $4871\frac{19}{80}$.
*55.* $1185\frac{5}{27}$.
*56.* $\frac{135}{616}$.
*57.* 13 feet.
*58.* $196\frac{1}{3}$.
*59.* $\frac{5}{16}$.
*60.* $40800; $57120; $45696.
*61.* 21582 gr.
*62.* The former.
*63.* 6 mi. 123 rd. 2 yd. 2 ft. 4 in.
*64.* $43\frac{767}{1260}$.
*65.* 62 cents (nearly).
*66.* 47.
*67.* $19\frac{1}{2}$ yd.
*68.* 3 mi. 90 rd. 1 yd. 1 ft. 10 in.
*69.* $5\frac{7}{12}$.
*70.* $1\frac{1}{5}$ T.; 9 T.
*71.* $274.68.
*72.* 67.
*73.* $12715.50.
*74.* 10143620 sec.
*75.* 21.909 rd.
*76.* 12.9+ in.; 6.14 in. (nearly).
*77.* $666\frac{2}{3}$ lb.
*78.* Gained; $7.50; $6\frac{2}{3}$%.
*79.* B, 30 da.; C, 10 da.; together, $7\frac{1}{2}$ da.


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