

Old Problems in Rule of Three  
From *University Arithmetic*  
by Charles Davies, LL.D.  
1870

1. If 8 hats cost \$24, what will 110 hats cost, at the same rate?
2. If 2 barrels of flour cost \$15, what will 12 barrels cost?
3. If I walk 168 miles in 6 days, how far can I walk, at the same rate, in 18 days?
4. If 8 lb. of sugar cost \$1.28, how much will 13 lb. cost?
5. If 300 barrels of flour cost \$2100, what will 125 barrels cost?
6. If 120 sheep yield 330 pounds of wool, how many pounds will 36 sheep yield?
7. If 80 yards of cloth cost \$340, what will 650 yards cost?

8. What is the value of 4 cwt. of sugar, at 5 cents a pound?
9. If 6 gallons of molasses cost \$1.95, what will 60 gallons cost?
10. If 16 men consume 560 pounds of bread in a month how much will 40 men consume?
11. If a man travels at the rate of 630 miles in 12 days, how far will he travel in a leap year, Sundays excepted?
12. If 2 yards of cloth cost \$3.25, what will be the cost of 3 pieces, each containing 25 yards?
13. If 3 yards of cloth cost 18s. New York currency, what will 36 yards cost?
14. If it requires eight shillings and four pence to buy eight ounces of laudanum, how many ounces can be purchased for 7s. 6d.?
15. If 5 A. 1R. 16 P. of land, cost \$150.5, what will 125 A. 2R. 20 P. cost?

16. If 13 cwt. 2qr. of sugar cost \$129.93, what will be the cost of 9 cwt.?
17. The clothing of a regiment of 750 men cost £2834 5s.: what will it cost to clothe a regiment of 10500 men?
18. If  $3\frac{3}{4}$  yards of cloth will make a coat and vest, when the cloth is  $1\frac{1}{2}$  yards wide, how much cloth will be needed when it is  $\frac{5}{8}$  of a yard in width?
19. If I have a piece of land  $16\frac{4}{5}$  rods long and  $3\frac{1}{2}$  rods wide, what is the length of another piece that is 7 rods wide and contains an equal area?
20. How many yards of carpeting that is three-fourths of a yard wide, will carpet a room 36 feet long and 30 feet in breadth?
21. If a man can perform a journey in 8 days, walking 9 hours a day, how many days will it require if he walks 10 hours a day?
22. If a family of 15 persons have provisions for 8 months, by how many must the family be diminished that the provisions may last 2 years?
23. A garrison of 4600 men has provisions for 6 months: to what number must the garrison be diminished that the provisions may last 2 years and 6 months?

24. A certain amount of provisions will subsist an army of 9000 men for 90 days: if the army be increased by 6000, now long will the same provisions subsist it?
25. If 3 yd. 2 qr. of cloth cost \$15.75, how much will 8 yd. 3 qr. of the same cloth cost?
26. If .5 of a house cost \$201.5, what will .95 cost?
27. What will 26.25 bushels of wheat cost, if 3.5 bushels cost \$8.40?
28. If the transportation of 2.5 tons of goods 2.8 miles costs \$1.80, what is that per cwt.?
29. If  $\frac{3}{4}$  of a yard of cloth cost \$2.16, what will be the cost of  $5\frac{1}{2}$  pieces, each containing 447 yards?
30. If  $\frac{5}{7}$  of an ounce cost  $\$ \frac{11}{12}$ , what will  $1\frac{1}{2}$  oz. cost?
31. What will be the cost of  $16\frac{4}{5}$  lb. of sugar, if  $14\frac{2}{3}$  lb. cost  $\$1\frac{5}{6}$ ?
32. If  $\$19\frac{1}{3}$  will buy  $14\frac{1}{2}$  yards of cloth, how much will  $39\frac{3}{8}$  yards cost?

33. If  $\frac{7}{8}$  of a barrel of cider cost  $\frac{9}{11}$  dollar, what will  $\frac{11}{14}$  of a barrel cost?
34. If  $\frac{3}{16}$  of a ship cost \$2880, what will  $\frac{15}{32}$  of her cost?
35. What will  $116\frac{1}{4}$  yards of cloth cost, if 462 yards cost 150.66?
36. If 6 men and 3 boys can do a piece of work in 330 days, how long will it take 9 men and 4 boys to do the same work, under the supposition that each boy does half as much as a man?
37. If 4 men can do a piece of work in 80 days, how many days will 16 men require to do the same work?
38. If 21 sappers make a trench in 18 days, how many days will 7 men require to make a similar trench?
39. A certain piece of grass was to be mowed by 20 men in 6 days; one-half the workmen being called away, it is required to find in what time the remainder will complete the work?
40. If a field of grain be cut by 10 men in 12 days, in how many days would 20 men have cut it?

41. If 90 barrels of flour will subsist 100 men for 120 days, how long will they subsist 75?
42. If a traveller perform a journey in 35.5 days, when the days are 13.566 hours long, in how many days of 11.9 hours, will he perform the same journey?
43. If 50 persons consume 600 bushels of wheat in a year, how long would they last 5 persons?
44. A certain work can be done in 12 days, by working 4 hours each day: how many days would it require to do the same work, by working 9 hours a day?
45. If  $7\frac{6}{11}$  barrels of fish cost  $\$31\frac{1}{4}$ , what will  $32\frac{2}{5}$  barrels cost?
46. How much wheat can be bought for  $\$96\frac{7}{8}$ , if 2 bu. 1pk. cost  $\$1.93\frac{3}{16}$ ?
47. If  $\frac{5}{8}$  of a yard of cloth cost  $\$1\frac{5}{9}$ , what will  $7\frac{1}{2}$  yards cost?  $\frac{3}{16}$
48. What will be the cost of 37.05 square yards of pavement, if 47.5 yards cost \$72.25?

49. If 3 paces or common steps be equal to 2 yards, how many yards will 160 paces make?
50. If a person pays half a guinea a week for his board, how long can he board for £21?
51. If 12 dozen copies of a certain book cost \$54.72 what will 297 copies cost at the same rate?
52. If an army of 900 men require \$3618 worth of provisions for 90 days, what will be the cost of subsistence, for the same time, when the army is increased to 4500 men?
53. A grocer bought a hogshead of rum for 80 cents a gallon, and after adding water sold it for 60 cents a gallon, when he found that the selling and buying prices were proportional to the original quantity and the mixture: how much water did he add?
54. A man failing in business, pays 60 cents for every dollar which he owes; he owes A \$3570, and B \$1875: how much does he pay to each?
55. A bankrupt's effects amount to \$2328.75, his debts amount to \$3726: what will his creditors receive on a dollar?
56. If a person drinks 80 bottles of wine in 3 months of 30 days each, how much does he drink in a week?

57. If  $4\frac{5}{7}$  yards of cloth cost 14s. 8d. New York currency, what will  $40\frac{4}{5}$  yards cost?
58. If a grocer uses a false balance, giving only  $14\frac{3}{4}$  oz. for a pound, how much will  $154\frac{7}{8}$  lb. of just weight give, when weighed by the false balance?
59. If a dealer in liquors uses a gallon measure which is too small by  $\frac{1}{2}$  of a pint, what will be the true measure of 100 of the false gallons?
60. After A has travelled 96 miles on a journey, B sets out to overtake him, and travels 23 miles as often as A travels 19 miles: how far will B travel before he overtakes A?
61. A person owning  $\frac{5}{7}$  of a coal mine, sold  $\frac{3}{4}$  of his share for \$9345: what was the value of the whole mine?
62. At what time, between 6 and 7 o'clock, will the hour and minute hands of a clock be exactly together?
63. If a staff, 5 feet long, casts a shadow of 7 feet, what is the height of a steeple, whose shadow is 196 feet, at the same time of day?
64. A can do a piece of work in 3 days, B in 4 days, and C in 6 days: in what time will they do it, working together?



65. A can build a wall in 15 days, but with the assistance of C, he can do it in 9 days: in what time can C do it alone?
66. If 120 men can build  $\frac{1}{2}$  mile of wall in  $15\frac{1}{4}$  days, how many men would it require to build the same wall in  $40\frac{2}{3}$  days?
67. If 3 horses, or 5 colts, eat a certain quantity of oats in 40 days, in what time will 7 horses and 3 colts consume the same quantity?
68. If a person can perform a journey in 24 days of  $10\frac{1}{2}$  hours each, in what time can he perform the same journey, when the days are  $20\frac{1}{4}$  hours long?
69. A piece of land, 40 rods long and 4 rods wide, is equivalent to an acre: what is the breadth of a piece 16 rods long that is equivalent to an acre?
70. If a person travelling 12 hours a day finishes one-half of a journey in ten days, in what time will he finish the remaining half, travelling 9 hours a day?
71. How many pounds weight can be carried 20 miles, for the same money that  $4\frac{1}{2}$  cwt. can be carried 36 miles?
72. If 72 horses eat a certain quantity of hay in  $7\frac{1}{2}$  weeks, how many horses will consume the same in 90 weeks?

73. A watch, which is 10 minutes too fast at 12 o'clock, on Monday, gains 3 min. 10 sec. per day: what will be the time, by the watch, at a quarter-past ten in the morning of the following Saturday?
74. Two persons, A and B, are on the opposite sides of a wood, which is 536 yards in circumference; they begin to travel in the same direction at the same moment; A goes at the rate of 11 yards per minute, and B at the rate of 34 yards in 3 minutes: how many times must A go round the wood before he is overtaken by B?