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19. Involve $\frac{5}{8}$ to the 7th power.
20. What is the square root of .0043046721?
21. Sold $2\frac{1}{2}$ cwt. of sugar at $\$8\frac{1}{4}$ per cwt., and thereby lost 12 per cent.: how much was the whole cost?
22. A person owned $\frac{5}{8}$ of a mine, and sold $\frac{3}{4}$ of his interest for \$1,710: what was the value of the entire mine?
23. When it is 2 hr. 36' A. M., at the Cape of Good Hope, in longitude $18^{\circ} 24'$ east, what is the time at Cape Horn, in longitude $67^{\circ} 21'$ west?
24. What is the cost of 17 tons 18 cwt. 1 qr. 17 lb. of potash at \$53.80 per ton?
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Examination II. March 1, 1867.

25. Express in words the number 42567000129301.
26. Multiply five hundred and forty thousand six hundred and nine, by seventeen hundred and fifty.
27. Give the rule for reduction descending.
28. How many steps of $2\frac{1}{2}$ ft. each would a man take in walking a mile?
29. How is a whole number reduced to a fraction of the same value having a given denominator?
30. What is the value of $\frac{2}{3}$ of $\frac{3}{8}$ of $\frac{1}{4}$ of $\frac{1}{2}$ when reduced to a simple fraction of the lowest terms?
31. Give the rule for reducing several fractions to equivalent fractions having the least common denominator.
32. Add $3\frac{2}{3}$ to $4\frac{2}{3}$.

33. Write in figures, two and six hundred-millionths.

34. Reduce 1375-8836 to a decimal.

35. Multiply seven thousand and five, by three hundred, and five millionths.

36. Divide 126.45 by 493.256.

37. The ratio of two numbers is 9, and the antecedent 90: what is the consequent?

38. Find the value of the omitted term in the following proportion:—

$$\$4 : (?) : : 9 : 16.$$

39. If 56lb. of butter cost \$15.68, what will .078 of a ton cost?

40. If 96 horses eat 192 tons of hay in one winter, how many tons will 150 horses eat in 6 winters?

41. In 1 yr. 4 mo., \$311.50 amounted to \$336.42 at simple interest: what was the rate per cent?

42. What is the interest of \$14,231.50 from June 29, 1860, to April 30, 1865, at $8\frac{1}{4}$ per cent?

43. Three notes are payable as follows:—one for \$200, January 1, 1866; another for \$350, due September 1, 1866; a third for \$500, due April 1, 1867: what is the average of maturity, or the equated time of payment?

44. How much will it cost to carpet a parlor 18 ft. square, with carpeting $\frac{3}{4}$ yd. wide, at \$1.50 per yd.?

45. The difference in the local time of two places is 2 hr. 18m.: what is the difference in longitude?

46. 33 is $2\frac{3}{4}$ per cent. of what number?

47. What is the length of each side of a square field which contains 5 acres?

48. A note for \$470.66 drawn at 60 days, is dis-

counted at bank at 6 per cent.: what are the proceeds?

Examination III. June 14, 1867.

49. Express in figures MDXXXVCDLXXXIX.
 50. Perform the operations indicated as follows:—
 51. Numerate (or express in words) 90067236708.
 52. What is the sum of 3912, 361, 40005, 98, 7368-63, 8342, 2900687, 9, 4000862, 28?
 53. If two persons start from the same place, and travel in the same direction, one 7 and the other 11 miles per hour, at the rate of 9 hours per day, how far apart will they be at the end of the 17th day?
 54. What is the amount due on the following bill of parcels:

ALBANY, June 1, 1866.

JOHN BARNES,

Bought of NATHAN HADLEY & Co.,

16 lb. tea, @ 1.05	-	-	-	-	-	\$
18 lb. sugar, @ .14	-	-	-	-	-	
25 lb. rice, @ .09	-	-	-	-	-	
15 yd. linen, @ .66	-	-	-	-	-	

	CR.					\$
By balance of account,	-	-	-	-	-	2.48

Balance due,	-	-	-	-	-	\$
Received payment, N. HADLEY, & Co.						

55. State the process of reducing inches to leagues.
 56. How many bu. will a box 8 ft. long, 4 ft. wide, and 3 ft. high contain?