Example 8. A student has an average of 85% on 3 one-hour exams. If each counts the same and the final counts twice as much as a one-hour exam, what percent must the student make on the final to have an overall average of 90% for the course?

Example 25. A test has two parts. The first part is worth 60% and the second part is worth 40%. If a student gets 95% of part one correct, what exact percent must this student achieve on part two to average 90% for the whole test?

Example 29. The price of an article is cut 10%. To restore it to its former value, the new price must be increased by:

(A) 10%   (B) 9%   (C) $11\frac{1}{9}$%   (D) 11%   (E) none of these answers

Example 30. 130 grams of a 5% salt solution are mixed with a 9% of salt solution to make a 6.4% of salt solution. What was the weight, in grams, of the resulting solution?

(A) 200   (B) 190   (C) 180   (D) 170   (E) 130

Problem 4. Sixty percent of the songs played on a certain radio station are 5 minutes long, 30 percent are 8 minutes long, and 10 percent are 6 minutes long. What is the average (arithmetic mean) number of minutes per song played on this radio station?

Problem 9. Sixty-four is 25% of what number?

Problem 10. 6000 is $1\frac{1}{2}$% of what number?

Problem 11. On an achievement test, ninth graders averaged 93% and eighth graders averaged 75%. A total of 90 students took the test and averaged 87%. How many ninth graders took the test?

Problem 14. The price of an article was marked down 35% during a sale. If the sale price was $36.40, what was the price before the sale?

Problem 17. An item was placed on sale in January for 30% less than its original price. A final close-out sale was offered in February, and the January sale price was reduced by 40%. What percent of the original price was the final reduced price?

Problem 18. How many dollars would be paid in simple interest if $200 is borrowed at 12% per year for 5 months?

Problem 20. A house and store were sold for $12,000 each. The house was sold at a loss of 20% of the cost, and the store at a gain of 20% of the cost. The entire transaction resulted in:
(A) no loss or gain   (B) loss of $1000   (C) gain of $1000
(D) gain of $2000   (E) none of these

Problem 21. A housewife saved $2.50 in buying a dress on sale. If she spent $25 for the dress, she saved about:
(A) 8%   (B) 9%   (C) 10%   (D) 11%   (E) 12%

Problem 22. How much water should be added to 8 liters of 90% alcohol to make a 40% alcohol solution?

Problem 23. How many liters of water should be added to 10 liter of a 20% saline (salt) solution to make a 5% saline solution?

Problem 26. A sort of coals weighed 100 kg contained 14.5% water. After some time evaporating, the water was 10%. What was the ratio of the weight of the coals now to the weight of coals before evaporation?
(A) 19/20   (B) 20/19   (C) 9/10   (D) 8/10   (E) 171/180

Problem 28. Alex and Betsy are both salespeople. Alex's weekly compensation consists of $800 plus 30 percent of his sales. Betsy's weekly compensation consists of $600 plus 35 percent of her sales. If they both had the same amount of sales and the same compensation for a particular week, what was that compensation, in dollars? (Disregard the dollar sign when recording your answer).

Problem 29. Twenty-four is $8\frac{1}{3}\%$ of what number?

Problem 31. If q and r are positive numbers, what percent of $(q + r)$ is r ?
(A) $\dfrac{1}{100r(q+r)}\%$ (B) $\dfrac{q+r}{100r}\%$ (C) $\dfrac{100(q+r)}{r}\%$ (D) $(\dfrac{100r}{q}+r)\%$ (E) $\dfrac{100r}{q+r}\%$

Problem 32. On a $10,000 order a merchant has a choice between three successive discounts of 20%, 20%, and 10% and three successive discounts of 40%, 5%, and 5%. By choosing the better offer, he can save:
(A) nothing at all   (B) $400   (C) $330   (D) $345   (E) $360

Problem 33. Ann borrowed $750.00 at a simple interest rate of 7.5% per year. How much will Ann owe after eight months?
(A) 37.50   (B) 795.50   (G) 56.25   (D) 787.50   (E) 800.00