

PROBLEMS INVOLVING PERCENTS

- III.23 Joe pays x dollars for an article and sells it to Tom for a 5% profit. Tom then sells it to Bill at a 10% loss. If the difference between the amounts Tom and Bill paid is 70 cents, then the value of x is
(a) 14 (b) $7/3$ (c) $5/7$ (d) $30/7$ (e) $20/3$
- IV.7 The student-faculty ratio at a certain school is 30 to 1. If the faculty were increased by 20% then the resulting ratio would be (a) 25 to 1 (b) 24 to 1 (c) 28 to 1 (d) 36 to 1 (e) depends on the original number of students and faculty.
- IV.17 Jack pays $\$P$, plus $r\%$ tax, for an article; he then sells the article to Bill at a loss of $s\%$ (loss based on Jack's total cost). If $\$Q$ is the amount Bill paid then $100(1 - Q/P) =$ (a) $rs/100 + (s - r)$ (b) $(r + s - rs)/100$ (c) $(r - s + rs)/100$ (d) $rs + (s - r)/100$ (e) $r + s - rs/100$
- VI.12 Tom bought some pens and paid a 5% sales tax. If there were no tax then he could have bought 3 more pens for the same total amount. What was the cost of each pen?
(a) 30 cents (b) 33 cents (c) 45 cents (d) $\$1.05$ (e) $\$1.25$
- VII.9 An amount of $\$1,000$ is invested for one year at an annual rate of interest of 9%. At the end of the year 30% of the earned interest is withdrawn for payment of income tax. The value of the investment is then
(a) $\$1,060$ (b) $\$1,027$ (c) $\$1,600$ (d) $\$1,063$ (e) $\$1,021$
- IX.5 Jack's current payroll deductions are 30% of his salary. If his current salary is increased by 10% and his current payroll deductions are increased by 15%, then the percent increase in the net amount of his paycheck will be nearest what integer?
(a) 4 (b) 5 (c) 6 (d) 8 (e) 12
- X.11 A department store purchases an item for $\$x$. There was a markup of 50% to determine the original selling price, and then a 10% reduction of this original selling price to give the sales price of the item. The sales price of the item was then (in dollars) (a) $1.4x$ (b) $1.6x$ (c) $1.3x$ (d) $1.35x$ (e) $1.45x$