

## PAPER XXIX.

281. A pound of tea and 7 pounds of sugar cost \$1.64. If sugar were to rise 60% and tea 25% they would cost \$2.33. Find the price per pound of tea and sugar.

282. A person sells 184 shares of 4% stock at 92 and invests in  $3\frac{1}{2}\%$  stock, gaining \$160 per annum by the change of income. At what price did he purchase the latter stock?

283. In erecting a house I paid three times as much for material as for labor. Had I paid 5% less for the material and 4% more for the labor the house would have cost me \$2334. What did the house cost?

284. How many pounds of coffee at 24 cents must a merchant mix with 6 pounds at 36 cents that he may sell the mixture at 40 cents and gain  $33\frac{1}{3}\%$ ?

285. Four pipes, A, B, C, and D, fill a cistern in 3, 12, 15, and 20 hours respectively. Four other pipes empty it in 4, 10, 30, and 60 hours respectively. If the eight pipes are open together, in how many hours will the cistern be filled?

286. A person increases his capital 20% annually, less a yearly expenditure of \$500. At the end of four years his capital amounts to \$18,052. Find his original capital.

287. A man bought a piece of cloth at \$1.40 a yard and lining for it at 60 cents a yard. There were 35 yards altogether, and the total price was \$37. How many yards were there of each?

X 288. A certain sum amounts to \$2070 in 6 months, and to \$2420 in 3 years, simple interest. What is the rate per cent?

289. How far must a person proceed on a stage which travels  $4\frac{1}{2}$  miles an hour in order that he may walk back at the rate of 3 miles an hour and be gone just  $7\frac{1}{2}$  hours?

290. A man buys 150 pounds of sugar, and after selling 100 pounds finds that he has been selling at a loss of 5%. At what per cent advance on the cost must he sell the remaining 50 pounds that he may gain 10% on the entire transaction?