

5. The amount of interest earned on one account is  $0.05x$  and the amount of interest earned on a second account is  $0.08(9000 - x)$ . If the two accounts earn the same amount of interest, then we can write the equation  $0.05x + 0.08(9000 - x)$ .
6. If the amount of interest earned on one account is  $0.06x$  and the amount of interest earned on a second account is  $0.09(4000 - x)$ , then the total interest earned on the two accounts can be represented as  $0.06x + 0.09(4000 - x)$ .

### EXERCISES 4.5

#### Investment Problems

1. A dentist invested a portion of \$15,000 in a 7% annual simple interest account and the remainder in a 6.5% annual simple interest government bond. The two investments earn \$1020 in interest annually. How much was invested in each account?
2. A university alumni association invested part of \$20,000 in preferred stock that earns 8% annual simple interest and the remainder in a municipal bond that earns 7% annual simple interest. The amount of interest earned each year is \$1520. How much was invested in each account?
3. A professional athlete deposited an amount of money into a high-yield mutual fund that earns 13% annual simple interest. A second deposit, \$2500 more than the first, was placed in a certificate of deposit earning 7% annual simple interest. In one year, the total interest earned on both investments was \$475. How much money was invested in the mutual fund?
4. Jan Moser made a deposit into a 7% annual simple interest account. She made another deposit, \$1500 less than the first, in a certificate of deposit earning 9% annual simple interest. The total interest earned on both investments for one year was \$505. How much money was deposited in the certificate of deposit?
5. A team of cancer research specialists received a grant of \$300,000 to be used for cancer research. They deposited some of the money in a 10% simple interest account and the remainder in an 8.5% annual simple interest account. How much was deposited in each account if the annual interest is \$28,500?
6. Reggie Means invested part of \$30,000 in municipal bonds that earn 6.5% annual simple interest and the remainder of the money in 8.5% corporate bonds. How much is invested in each account if the total annual interest earned is \$2190?
7. To provide for retirement income, Teresa Puelo purchases a \$5000 bond that earns 7.5% annual simple interest. How much money does Teresa have invested in bonds that earn 8% annual simple interest if the total annual interest earned from the two investments is \$615?

8. After the sale of some income property, Jeremy Littlefield invested \$40,000 in a certificate of deposit that earns 7.25% annual simple interest. How much money does he have invested in certificates that earn an annual simple interest rate of 8.5% if the total annual interest earned from the two investments is \$5025?
9. Suki Hiroshi has made an investment of \$2500 at an annual simple interest rate of 7%. How much money does she have invested at an annual simple interest rate of 11% if the total interest earned is 9% of the total investment?
10. Mae Jackson has a total of \$6000 invested into two simple interest accounts. The annual simple interest rate on one account is 9%. The annual simple interest rate on the second account is 6%. How much is invested in each account if both accounts earn the same amount of interest?
11. A charity deposited a total of \$54,000 into two simple interest accounts. The annual simple interest rate on one account is 8%. The annual simple interest rate on the second account is 12%. How much was invested in each account if the total annual interest earned is 9% of the total investment?
12. A sports foundation deposited a total of \$24,000 into two simple interest accounts. The annual simple interest rate on one account is 7%. The annual simple interest rate on the second account is 11%. How much is invested in each account if the total annual interest earned is 10% of the total investment?
13. Wayne Miller, an investment banker, invested 55% of the bank's available cash in an account that earns 8.25% annual simple interest. The remainder of the cash was placed in an account that earns 10% annual simple interest. The interest earned in one year was \$58,743.75. Find the total amount invested.
14. Mohammad Aran, a financial planner, recommended that 40% of a client's cash account be invested in preferred stock earning 9% annual simple interest. The remainder of the client's cash was placed in Treasury bonds earning 7% annual simple interest. The total annual interest earned from the two investments was \$2496. Find the total amount invested.
15. Sarah Ontkian is the manager of a mutual fund. She placed 30% of the fund's available cash in a 6% annual simple interest account, 25% in 8% corporate bonds, and the remainder in a money market fund earning 7.5% annual simple interest. The total annual interest earned from the investments was \$35,875. Find the total amount invested.
16. Joseph Abruzzio is the manager of a trust. He invested 30% of a client's cash in government bonds that earn 6.5% annual simple interest, 30% in utility stocks that earn 7% annual simple interest, and the remainder in an account that earns 8% annual simple interest. The total annual interest earned from the investments was \$5437.50. Find the total amount invested.