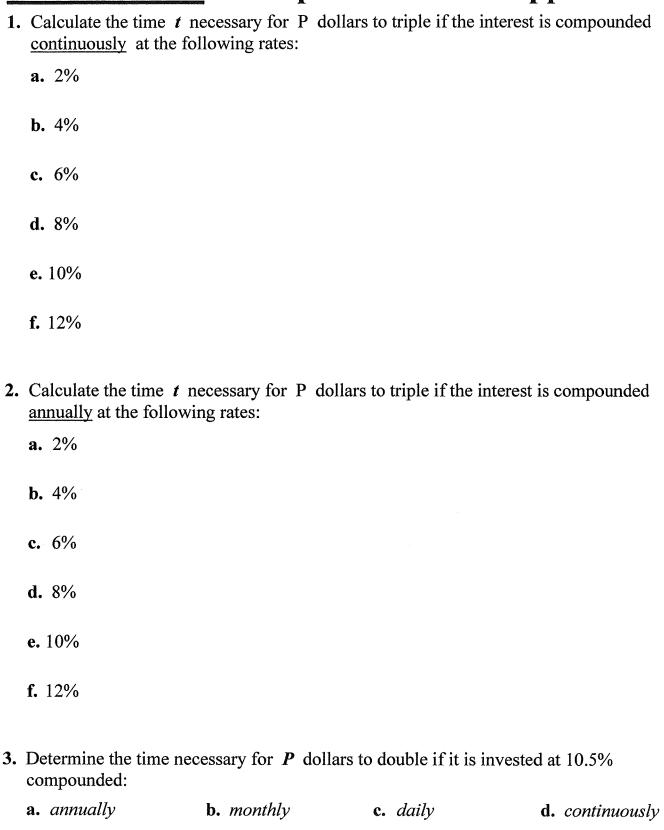
Name	Date

**Practice 5.5A:** Compound Interest Applications



**4.** Determine the Principle P that must be invested at 12.5%, compounded <u>monthly</u>, so that \$1,000,000 will be available for retirement in t years.

**a.** t = 10

**b.** t = 20

**c.** t = 25

**d.** t = 40

**5.** Complete the table for a savings account in which interest is compounded continuously.

Initial <u>Investment</u> Annual <u>Rate</u> Time to <u>Double</u> Amount after <u>10 years</u>

**a.** \$20,000

10.5%

**b.** \$10,000

5 yrs

c.

8%

\$20,000

- **6.** If \$100 is invested in an account for a 10 year period, which would result in a larger amount:
  - **a.** Simple interest at 7.5%: A = 100(1 + 0.075t)
  - **b.** Continuously compounding interest at 6.5%:  $A = 100e^{0.065t}$
- 7. Extra Credit If \$100 is invested in an account for a 10 year period, which would result in a higher rate of growth: (solve by graphing in the same window. Sketch your graph)
  - **a.** Simple interest at 6%: A = 100(1 + 0.06t)
  - **b.** Monthly compounding interest at 5%:

$$A = 100(1 + \frac{.05}{12})^{12t}$$