Solutions

5.3 Exit Note: Simple interest rates

4. Simplify each expression to the base raised to a power.

(a) $7^3 \times 7^6 = 7^9$

(b) $\frac{5^8}{5^4} = 5^4$

(c) $x^2 \times x^9 = x^{11}$

(d) $\left(\frac{z^7}{z^2}\right)^2 = z^{10}$

5. A bank account earns interest at an annual interest rate of 5.125%. The initial deposit is \$225. Which equation models the value of the balance?

(a) $FV = 225 \cdot \left(\frac{5.125}{100}\right)^t$

(b) $FV = 225(1 + 5.125)^t$

(c) $FV = 225 \cdot 5.125^t$

(d) $FV = 225 \cdot \left(1 + \frac{5.125}{100}\right)^t$

6. Carlos puts \$9,800 into an investment account with an annual interest rate of 2.75%. What is the balance after 3 years, rounded to the nearest cent?

$FV = 9,800\left(1 + \frac{2.75}{100}\right)^3$

$= 10,630.9375\ldots \approx \$10,630.94$

7. The graph shows the exponential function $FV = 1,100 \times \left(1 + \frac{6.125}{100}\right)^t$ representing the balance of an investment account earning a fixed rate of interest over t in years.

(a) Write down the initial deposit in the account.

1100

(b) What is the annual interest rate?

6.125%

(c) Approximately how much will the account hold at the end of ten years?

\$2000

(d) When will the balance be \$1,400?

after 4 years