Accelerated Coordinate Algebra Name _____

Compound Interest Worksheet

1. $15,000 is deposited in an account that pays 3.5 % annual interest, compounded quarterly. Find the value of the account after 10 years.

$y = 15{,}000\left(1+\frac{.035}{4}\right)^{10\cdot 4}$

$y = \$21253.63$

2. You borrowed $30,200 for 15 years at an interest rate of 13.6% and it's compounded semi annually. How much in total will you have paid after 15 years?

$y = 30{,}200\left(1+\frac{.136}{2}\right)^{2\cdot 15}$

$\$217,342.45$

3. You deposit $2000 in an account that earns 5% annual interest. Find the balance in the account at the end of 2 years if the account is compounded monthly.

$y = 2000\left(1+\frac{.05}{12}\right)^{12\cdot 2}$

$y = \$2208.02$

4. You deposit $30,000 in an account that earns 5 % interest, compounded annually. Find the balance in the account at the end of 5 years, at the end of 10 years, and at the end of 20 years.

$y = 30000\left(1+\frac{.05}{1}\right)^{5}$ $\$38289.45$

$y = 30000\left(1+\frac{.05}{1}\right)^{10}$ $\$48866.84$

$y = 30{,}000\left(1+\frac{.05}{1}\right)^{20}$ $\$79598.99$

5. Your investment of $18,100 at 13.6% compounded quarterly for 7 years and 6 months will be worth how much?

$y = 18100\left(1+\frac{.136}{4}\right)^{(4\cdot 7.5)}$

$\$49356.96$

Advanced Algebra

Simplifying Expressions Review

Simplify the Expressions

1. $e^{-2} \cdot e^{4}$

e^{2}

2. $e^{6} \cdot e^{-2} \cdot e^{4}$

e^{8}

3. $(4e^{-3})^{2}$

$\frac{16}{e^{6}}$

4. $5e^{-2}$

$\frac{5}{e^{2}}$

5. $\frac{e^{6}}{e^{-2}}$

e^{8}

6. $\left(\frac{2}{3}e^{3}\right)^{-2}$

$\frac{9}{4e^{6}}$ $\quad \frac{2^{-2}}{3^{-2}} e^{-6}$

7. $\frac{e^{4} \cdot e^{-2}}{e^{3}}$

$\frac{1}{e}$

8. $\sqrt{16e^{6}}$

$4e^{3}$

9. $\sqrt{e^{-4} \cdot e^{6}}$

e

10. $(3e^{-2})^{3}$

$\frac{27}{e^{6}}$