Algebra 2 Name_____

Compound Interest Practice

1) Mofor invests $1,337 in a retirement account with a fixed annual interest rate of 4.04% compounded 3 times per year. What will the account balance be after 18 years?

r=.0404
n=3
t=18

$A = 1337\left(1 + \frac{.0404}{3}\right)^{3 \cdot 18}$

$2753.23

2) Willie invests $6,003 in a savings account with a fixed annual interest rate of 4.64% compounded 6 times per year. What will the account balance be after 9 years?

$A = 6003\left(1 + \frac{.0464}{6}\right)^{6 \cdot 9}$

$9099.80

3) Kathryn invests $4,261 in a savings account with a fixed annual interest rate of 4.92% compounded 3 times per year. What will the account balance be after 7 years?

$4261\left(1 + \frac{.0492}{3}\right)^{3 \cdot 7}$

$5996.11

4) Jennifer invests $1,601 in a savings account with a fixed annual interest rate of 8.77% compounded 4 times per year. What will the account balance be after 5 years?

$1{,}601\left(1 + \frac{.0877}{4}\right)^{4 \cdot 5}$

$2470.43

5) Jack invests $4,268 in a savings account with a fixed annual interest rate of 7.40% compounded 12 times per year. What will the account balance be after 12 years?

$4268\left(1 + \frac{.0740}{12}\right)^{12 \cdot 12}$

$10344.12

6) Nicole invests $5,202 in a savings account with a fixed annual interest rate of 3.17% compounded 3 times per year. What will the account balance be after 11 years?

$5202\left(1 + \frac{.0317}{3}\right)^{3 \cdot 11}$

$7358.92

7) Eduardo invests $5,975 in a savings account with a fixed annual interest rate of 7.77% compounded 3 times per year. What will the account balance be after 9 years?

$5975\left(1 + \frac{.0777}{3}\right)^{3 \cdot 9}$

11,917.19

8) Kathryn invests $5,010 in a retirement account with a fixed annual interest rate of 5.15% compounded 2 times per year. What will the account balance be after 16 years?

$5{,}010\left(1 + \frac{.0515}{2}\right)^{2 \cdot 16}$

11,302.29

9) Imani invests $1,231 in a retirement account with a fixed annual interest rate of 6.05% compounded 6 times per year. How long will it take for the account balance to reach $3,637.78?

$3637.78 = 1231\left(1 + \frac{.0605}{6}\right)^{6t}$

$2.96 = (1.01)^{6t}$

$\frac{\log 2.96}{\log 1.01} = 6t$

$109.06 = 6t$

$t \approx 18$ yrs

10) John invests $6,209 in a savings account with a fixed annual interest rate of 8.31% compounded 4 times per year. How long will it take for the account balance to reach $14,132.62?

$14{,}132.62 = 6209\left(1 + \frac{.0831}{4}\right)^{4t}$

$2.28 = (1.021)^{4t}$

$\frac{\log 2.28}{\log 1.021} = 4t$

$39.7 = 4t$

$t \approx 10$ yrs

11) Mark invests $4,969 in a retirement account with a fixed annual interest rate of 7.93% compounded 12 times per year. How long will it take for the account balance to reach $24,143.16?

$24{,}143.16 = 4969\left(1 + \frac{.0793}{12}\right)^{12t}$

$4.86 = (1.007)^{12t}$

$\frac{\log 4.86}{\log 1.007} = 12t$

$226.75 = 12t$

$t \approx 19$ yrs

12) Shanice invests $3,980 in a retirement account with a fixed annual interest rate of 8.81% compounded 12 times per year. How long will it take for the account balance to reach $21,095.66?

$21{,}095.66 = 3{,}980\left(1 + \frac{.0881}{12}\right)^{12t}$

$5.3 = (1.007)^{12t}$

$\frac{\log 5.3}{\log 1.007} = 12t$

$239.08 = 12t$ $t \approx 20$ yrs

13) Totsakan invests $5,581 in a retirement account with a fixed annual interest rate of 3.64% compounded 6 times per year. How long will it take for the account balance to reach $8,945.39?

$8945.39 = 5581\left(1 + \frac{.03364}{6}\right)^{6t}$

$1.60 = (1.006)^{6t}$

$\frac{\log 1.60}{\log 1.006} = 6t$

$78.6 = 6t$

$t \approx 13$ yrs

14) Castel invests $3,634 in a retirement account with a fixed annual interest rate of 2.48% compounded 3 times per year. How long will it take for the account balance to reach $5,810.10?

$5810.10 = 3634\left(1 + \frac{.0248}{3}\right)^{3t}$

$1.6 = 1.008^{3t}$

$\frac{\log 1.6}{\log 1.008} = 3t$

$60 = 3t$ $t \approx 20$ yrs

15) Maria invests $2,819 in a retirement account with a fixed annual interest rate of 2.18% compounded 3 times per year. How long will it take for the account balance to reach $3,904.77?

$3904.77 = 2819\left(1 + \frac{.0218}{3}\right)^{3t}$

$1.39 = (1.007)^{3t}$

$\frac{\log 1.39}{\log 1.007} = 3t$

$47.2 = 3t$

$t \approx 16$ yrs

16) Julio invests $5,275 in a retirement account with a fixed annual interest rate of 5.97% compounded 3 times per year. How long will it take for the account balance to reach $15,287.36?

$15{,}287.36 = 5275\left(1 + \frac{.0597}{3}\right)^{3t}$

$2.9 = (1.02)^{3t}$

$\frac{\log 2.9}{\log 1.02} = 3t$

$53.8 = 3t$

$t \approx 18$ yrs