Quiz F.1 Name KEY

1) $8000 is invested at 3.2% simple interest for 100 weeks. Determine the interest earned and the total value.

$I = 8000(0.032)(\frac{100}{52})$

$I = \boxed{\$492.31}$

$A = 8000 + 492.31$

$A = \boxed{\$8492.31}$

2) Money is invested at 4.1% simple interest. After 10 years it earns $3444 in interest. Determine the amount invested.

$\frac{3444}{(0.041)(10)} = \frac{P(0.041)(10)}{(0.041)(10)}$

$P = \boxed{\$8400}$

3) $12 000 is invested in an account that pays 2.8% interest, compounded monthly. Determine the value after 4 years and the interest earned.

$A = 12000(1 + \frac{0.028}{12})^{4\times12}$

$A = \boxed{\$13420.40}$

$I = 13420.40 - 12000$

$I = \boxed{\$1420.40}$

4) Money is invested in an account that pays 2.4% interest, compounded annually. After 6 years the value is $5995.19. Determine the amount invested.

$5995.19 = P(1 + \frac{0.024}{1})^{6\times1}$

$\frac{5995.19}{1.1529} = \frac{P(1.1529)}{1.1529}$

$P = \boxed{\$5200}$

5) Jimmy's credit card charges 23.79% interest, compounded daily, on late payments. It has an 10% minimum payment. In one month he spent $2370 on his credit card. He made the minimum payment before the due date. How much does he owe 23 days after the due date.

$2370 \times 0.10 = \$237.00$ ← minimum payment

$2370 - 237 = \$2133$ ← balance

$A = 2133(1 + \frac{0.2379}{365})^{\frac{23}{365}\times\frac{365}{1}}$

$A = \boxed{\$2165.21}$

6) Jimmy's credit card charges interest, compounded daily, on late payments. In one month he spent $2687.89 on his credit card. 21 days after the due date he owes $2726.17. Determine the credit card's interest rate.

$\frac{2726.17}{2687.89} = \frac{2687.89(1 + \frac{r}{365})^{21}}{2687.89}$

$\sqrt[21]{1.0142} = (1 + \frac{r}{365})^{21}$

$1.00067 = 1 + \frac{r}{365}$

$0.00067 = \frac{r}{365} \longrightarrow r = \boxed{24.59\%}$