Quiz Four

Show all your work

Name: _____

Number: _____

Signature: _____

Score: ___/10

Problem 1: Solve for the indicated variable in each of the following.

a. Solve for P in $I = Prt$

If $I = Prt$, then divide both sides by rt to get $P = I/(rt)$.

b. Solve for x in $(2.15)^x = 13$. Provide accuracy to two decimal places.

If $(2.15)^x = 13$, then $\log\left((2.15)^x\right) = \log(13)$, so $x\log(2.15) = \log(13)$, so $x = \frac{\log(13)}{\log(2.15)} \approx 3.35$.

c. Solve for r in $A = P(1 + r)^8$. The exponent is 8.

If $A = P(1 + r)^8$, then $A/P = (1 + r)^8$, so $(A/P)^{1/8} = 1 + r$, so

$$r = (A/P)^{1/8} - 1$$

Score: /5

Problem 2: David's grandmother treated everyone in the family to the modern opera, *Flight*, in the spring. If the tickets including a $12\,\%$ tax came out to $642.43, what was the price of opera tickets before tax?

Say the price (before taxes) was x. Then $1.12x = 642.43$, so $x = 642.43/1.12 \approx \$573.60$.

Score: /1

Problem 3: Janette's friend, Tino, purchased a recreational vehicle and financed $7400 at $530 per month for 20 months. Assuming the add-on interest method, what was the amount of interest paid over 20 months? Find the annual interest rate charged on the loan.

Tino paid a total of $20 \times \$530 = \$10\,600$. Since Tom borrowed $7400, the total interest paid was $3200.
To find the annual interest rate, $3200 \div 7400 \div 1.67 \approx 0.259$, so around $26\,\%$.

Score: /3

Problem 4: If *Chancellor's Capilano Financial* Visa card charges $19\,\%$ on unpaid balance, how much would it cost in finance charge to leave $521 unpaid past the due date for 60 days? Hint: Credit card companies use 365 days a year. For the sake of simplicity, use simple interest.

$$\$521 \times \frac{0.19}{365} \times 60 \approx \$16.27$$

Score: /1