

NAME: (Last, First) _____

This is a 60 minute exam. All work must be shown for full credit.

Good Luck!!

Run \LaTeX again to produce the table

1. (8 points) Convert the base 3 numeral 102_3 to base 10.

2. (8 points) Convert the base 2 numeral 1110_2 to base 10.

3. (8 points) Convert the base 5 numeral 432_5 to base 10.

4. (8 points) Convert the base 10 numeral 88 to base 5 .

5. (8 points) Convert the base 10 numeral 66 to base 3 .

6. (8 points) Convert the base 10 numeral 24 to base 2 .

7. Suppose that you borrow \$3500 from a family member for 4 years. You agree to pay them back with 3% yearly simple interest.

(a) (8 points) How much interest do you pay them at the end of the loan?

(b) (8 points) How much do you owe them at the end of the loan?

Compound Interest Formula: $A = P \times \left(1 + \frac{r}{n}\right)^{(n \times t)}$

8. (18 points) Suppose that you take out student loans in the amount of \$30000 at the start of your college career. While in college for 4 years the loan grows with an 8% interest rate compounded yearly. How much money do you owe in interest after 4 years?

9. (18 points) Suppose that you purchase a couch for \$2500 at a store that allows you to make no payments for 2 years. In this time, interest is accrued at an interest rate of 29% compounded monthly. At the end of the 2 year no payment period, how much do you owe on the couch loan?

This page is intentionally left blank for work.