BECA / IB Math 5 Exponential functions Name:
2 March 2022

5.6 Exit Note: Compound Interest

I can calculate compound interest CCSS.HSF.LE.A.2

$FV = PV \times \left(1 + \frac{r}{100k}\right)^{kn}$ where FV is the future value,

PV is the present value, n is the number of years,
k is the number of compounding periods per year,
r% is the nominal annual rate of interest

1. Do Now: Louis invests \$8,500 in an account with an annual interest rate of 4.15%. What is the balance after 4 years?

2. A three year loan for \$17,500 compounds monthly with an annual interest rate of 7.25%.

   (a) How many compounding periods are there per year?

   $k =$

   (b) Find the final balance of principal and interest after three years.

3. The graph shows the exponential function $f(x) = 1200 \times (1 + 0.18)^t$ representing 18% annual growth rate over t years.

   (a) Write down the initial value of the function.

   (b) Find $f(8)$

   (c) Find t such that $y = 2000$