Directions: Please answer the following questions and make sure your answer are legible. If you don’t show work and/or I can’t follow it, I won’t give partial credit. You may use a calculator (not the calculator function on other technology) and the Formula Sheet that I provide you, nothing else. Good Luck.

1. (7 points) We can only assume Tina Fey made a lot of money doing her Sarah Palin impressions on SNL in 2008 and early 2009. We will assume Tina made $30,000 for her Palin impressions\(^1\) in 2008/early 2009. We will also assume that Tina put all of that money into an investment that earned 6.27% interest.

   (a) How much will be in the account today (6 years later) if the interest was compounded quarterly?

   (b) How much will be in the account today (6 years later) if the interest was compounded continuously?

\[ FV = PV(1+i)^n \]
\[ PV = 30,000 \]
\[ i = \frac{0.0627}{4} \]
\[ n = 6 \times 4 = 24 \]
\[ FV = 30,000 (1 + \frac{0.0627}{4})^{24} \]
\[ FV = 43,574.83 \]

\[ FV = Pe^{rt} \]
\[ PV = 30,000 \]
\[ r = 0.0627 \]
\[ t = 6 \text{ (years)} \]
\[ FV = 30,000 e^{0.0627 \times 6} \]
\[ FV = \underline{43,702.15} \]

There is a question on the back!

\(^1\)This number is totally made up.
2. (8 points) People love watching Will Ferrell impersonate Alex Trebek when he hosts Celebrity Jeopardy on SNL. Due to the popularity of SNL’s 40th Anniversary Special that aired last night, Will realizes he can make extra cash doing Trebek impressions for money. Today (Monday Feb. 16) Will makes $8,000 (since his impression is very in demand). Will estimates that he will make 10% less every day.²

(a) How much will Will make doing his Trebek impersonation tomorrow (Tuesday Feb 17)?

(b) How much will Will make doing his Trebek impersonation on Sunday March 1 (his 14th day of making money from impressions)?

(c) How much money total will Will make doing his Trebek impersonations in the 14 day period from Monday Feb 16 to Sunday March 1?

²This scenario about Will Farrell doing Alex Trebek impressions for hire is totally made up. To the best of my knowledge you cannot hire Will Farrell to come host your own personal Celebrity Jeopardy knock off for your friends and family.