Exponential Functions Quiz /21

1. Consider the function $f\left(x\right)=3^{\frac{x}{2}}-3$.

a) In terms of transformations, how is this graph related to the graph of $f\left(x\right)=3^{x}$? 2 marks

b) Graph the function. Identify the domain, range, intercepts, and asymptotes. Clearly mark at least 4 points on graph. 6 marks

2. Solve $9^{2x-1}=27^{3x}$. 3 marks

3. $1000 is invested for 3 years at 6% interest per year. How much more money will you have earned if the interest is compounded monthly instead of yearly? 5 marks

4. The half-life of cobalt-57 is 270 days. A hospital buys 30 mg of this substance. 5 marks

a) Write a function describing how much of the substance, A in milligrams, will remain after *n* days.

b) How much of the substance will remain after 2 years?

c) How long will it be until only 6.25% of the substance remains?