Exponentials. Warmup, graphs, and word problems

Warmup: The population of a city is 45,000 on Jan 1, 2017; then 47,000 on Jan 1, 2018. What was the rate of growth? (Write as a decimal or percent.)

Warmup #2: The population of a city is 102,000 on Jan 1, 2017. During 2017, it grew by 0.064 (6.4%) of its starting value. What is the population on Jan 1, 2018?

Graph #1: $y = 2^x$
Graph #2: $y = 40*2^x$
Graph #3: $y = 1.05^x$
Graph #4: $y = 3^{(x/5)}$
Graph #5: $y = (0.8)^x$
Graph #6: $y = 1.25^{-x}$
Graph #7: $y = e^x$
Graph #8: $y = e^{(0.1x)}$

Find an exponential model for each:

A) Population of a city starts at 30,000. It grows 2.7% per year.
B) Radioactive substance starts at 900 micrograms. It decreases by 21.7% each hour.
C) Money starts at $2,500. It doubles every 15 years.
D) Number of germs starts at 50,000. Rate of growth (per minute) equals 0.004 times the number present at that time.