Name:

1. The ratio of US dollars to Japanese Yen to German Marks is currently 5 : 420: 7.
   a) Fill in the following table:

USD	YEN	DEM
5	**420**	**7**
1		
	1	
		1

   b) Every currency is proportional to the others. Which two currencies have a constant of proportionality equal to 60?
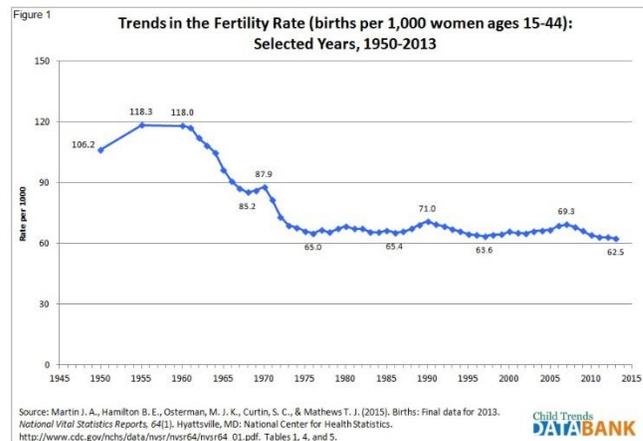
   c) Write down an equation $y = k \cdot x$ expressing the relationship between these two currencies using 60 as the constant of proportionality.

2. The U.S. Census in 2010 counted 308,745,538 people and there were 3,999,386 births that year.
   a) Compute the ratio of births to population and scale the second quantity to 1,000. This is known as the *birth rate*.

   b) This rate in 2010 is 3% **lower** than the 2009 birth rate. Give one plausible explanation why the rate is lower given that the population grew (so fewer births, why?).

c) Why are the fertility rates in the graphic below so much higher than the birth rate?

3. Which of the following are proportional?

a) Births : Population

b) Weight of bricks : Number of bricks

c) Population density (people per sq. mile) of Maine : Population of Maine

d) Number of donations to a charity : Money raised for the charity