Chromium-254 is a radioactive isotope with a half-life of approximately 1 month.

Chromium-254 is a radioactive isotope with a half-life of approximately 1 month.

Let's suppose we begin with an 8 gram sample of chromium.

After 1 month, we will be left with a 4 gram sample

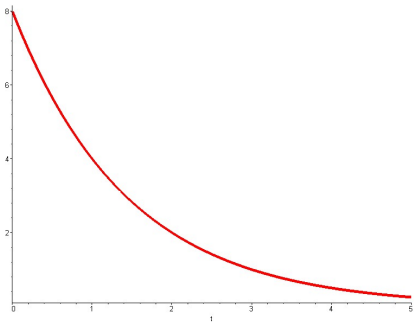
Number of months	Mass of chromium
0	8 grams
1	4 grams
2	2 grams
3	1 gram
4	$\frac{1}{2}$ gram

Number of months	Mass of chromium
0	8 grams
1	$8 \cdot \frac{1}{2} = 4$ grams
2	$8 \cdot \frac{1}{2} \cdot \frac{1}{2} = 2$ grams
3	$8 \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = 1$ gram
4	$8 \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2} = \frac{1}{2}$ gram

Number of months	Mass of chromium
0	8 grams
1	$8 \cdot \frac{1}{2} = 4$ grams
2	$8 \cdot \left(\frac{1}{2}\right)^2 = 2$ grams
3	$8 \cdot \left(\frac{1}{2}\right)^3 = 1$ gram
4	$8 \cdot \left(\frac{1}{2}\right)^4 = \frac{1}{2}$ gram

$$f(t) = 8 \cdot \left(\frac{1}{2}\right)^t$$

$$f(t) = 8 \cdot \left(\frac{1}{2}\right)^t$$



The number of giardia organisms will quadruple every day

Number of days	Number of organisms
0	1
1	4
2	$4^2 = 16$
3	$4^3 = 64$
4	$4^4 = 256$

$$f(t) = 4^t$$

$$f(t) = 4^t$$