INTERPRETING GRAPHICS

The table below shows the half-lives of some radioactive isotopes. Use the table below to answer the questions that follow

Examples of Half-Lives	
Isotope	**Half-life**
Hydrogen-3	12.3 years
Nitrogen-13	10 min
Oxygen-21	3.4 s
Calcium-36	0.1 s
Polonium-210	138 days
Uranium-238	4.5 billion years

_____ **1.** Half of a sample of which of the following isotopes would take the longest to decay?

A uranium-238
B hydrogen-3
C polonium-210
D calcium-36

_____ **2.** How old is an artifact if only one-fourth of the hydrogen-3 in the sample remains?

F 3.075 years
G 6.15 years
H 12.3 years
I 24.6 years

_____ **3.** How many days will it take for three-fourths of a sample of radioactive polonium-210 to decay?

A 69 days
B 103.5 days
C 138 days
D 276 days

_____ **4.** How many isotopes have shorter half-lives than polonium-210?

F two
G three
H four
I five

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MATH

Read each question below, and choose the best answer.

_____ **1.** The Butterfly Society spent 1.5 h planting a butterfly garden on Saturday and twice as many hours on Sunday. Which equation could be used to find the total number of hours they spent planting on those 2 days?

A $n = 2(1.5)$
B $n = 1.5 + 2(1.5)$
C $n = 1.5 + 1.5 + 2$
D $n = 2 \times 2 \times 1.5$

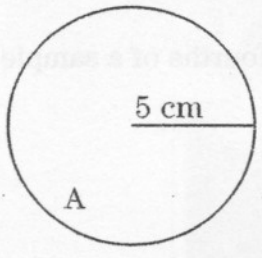
_____ **2.** How many half-lives have passed if one-eighth of a sample of radioactive carbon-14 remains?

F two
G three
H four
I eight

_____ **3.** Which of the following shows the correct fraction of the original sample of radioactive isotope that remains after four half-lives?

A 4(1/2)
B (1/2)(1/4)
C 4 1/2
D (1/2)(1/2)(1/2)(1/2)

_____ **4.** To find the area of a circle, use the equation $area = \pi r^2$. If the radius of circle A is doubled, how will the area of the circle change?



F The area will be 1/4 as large.
G The area will be 1/2 as large.
H The area will be 2 times larger.
I The area will be 4 times larger.