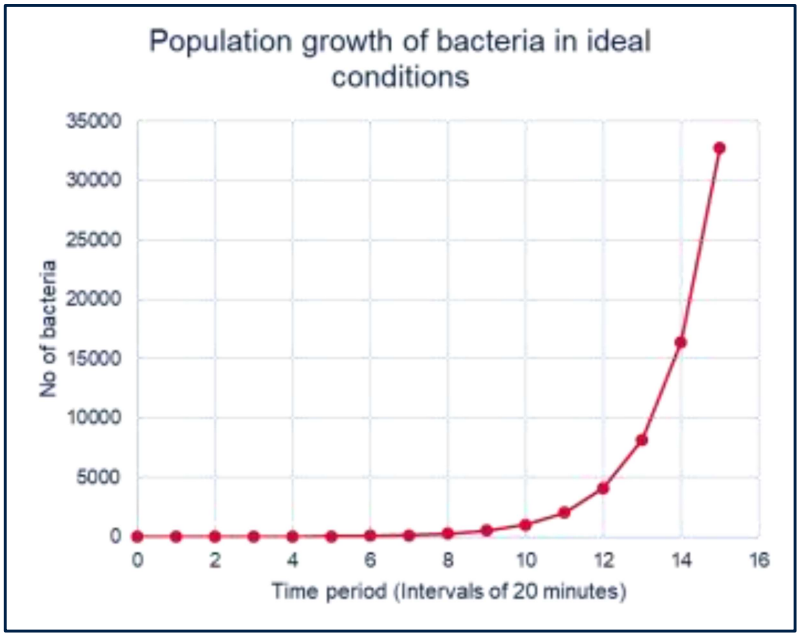
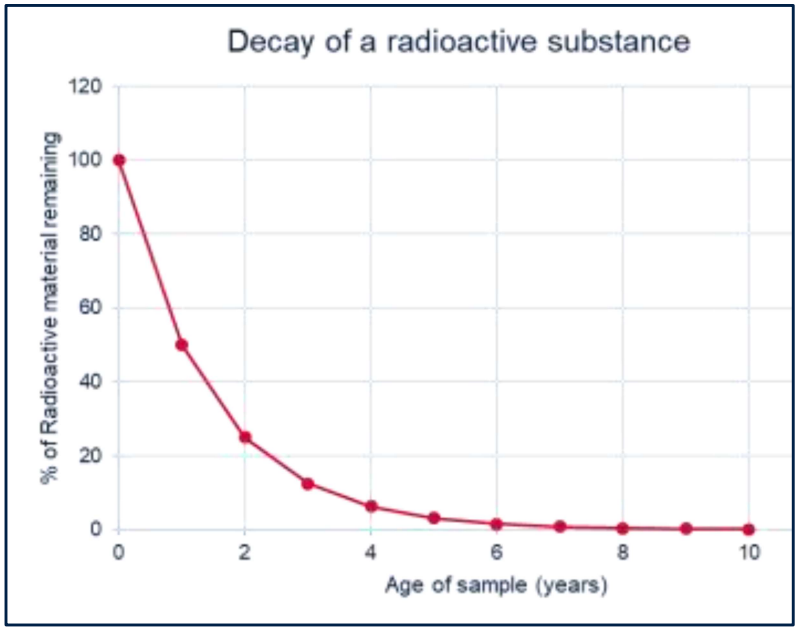
Did you know?

Indices are also referred to as Exponents





e.g. $2^3 = 8$

3 is the 'exponent'

$2^3 = 2 \times 2 \times 2$

It tells us how many times a number is multiplied by itself

This is where exponential graphs come from!

Indices 1

Simplify the following:

1. $x^3 \times x^8 =$

2. $\frac{9^8}{9} =$

3. $(2^3)^5 =$

4. $\frac{4^4 \times 4}{(4^2)^3} =$

5. $16^{\frac{1}{2}} =$

6. What is the reciprocal of 16?

7. What is 4^{-3} ?

8. What is $\left(\frac{2}{5}\right)^{-1}$?

Indices 1

Solutions on the next slide….

Indices 1 Solutions

Simplify the following:

1. $x^3 \times x^8 = x^{11}$

2. $\frac{9^8}{9} = 9^7$

3. $(2^3)^5 = 2^{15}$

4. $\frac{4^4 \times 4}{(4^2)^3} = \frac{4^5}{4^6} = 4^{-1} = \frac{1}{4}$

5. $16^{\frac{1}{2}} = \sqrt{16} = 4$

6. What is the reciprocal of 16? $\frac{1}{16}$

7. $4^{-3} = \frac{1}{4^3} = \frac{1}{64}$

8. $\left(\frac{2}{5}\right)^{-1} = \frac{5}{2}$

Unsure about any of these? Search Laws of indices. Next try Skills check 2….

Indices 2

Simplify the following:

1. $t^5 \times t^4 =$

2. $\frac{8^7}{8^2} =$

3. $(3^4)^2 =$

4. $\frac{5^7 \times 5}{(5^3)^3} =$

5. $8^{\frac{1}{3}} =$

6. $y^0 =$

7. What is 3^{-4} ?

8. What is $\left(\frac{2}{3}\right)^{-2}$

You can do this for fun - or move on if you correctly completed Skills check 1.

Indices 2

Solutions on the next slide….