Calculating Orders of Magnitude

1. An animal cell has a diameter of 10µm. A mitochondrion has a diameter of 1µm. Find the difference in order of magnitude.

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2. A flea has a length of 0.5mm. A dog has a length of 50cm. Find the difference in order of magnitude.

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3. A leaf has a diameter of 20cm. A palisade cell has a diameter of 20µm. Find the difference in order of magnitude.

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Calculating Orders of Magnitude **Answers**

1. An animal cell has a diameter of 10μm. A mitochondrion has a diameter of 1μm. Find the difference in order of magnitude.

   $10 \div 1 = 10$

   $10 = 10^1$

   difference = 1 order of magnitude

2. A flea has a length of 0.5mm. A dog has a length of 50cm. Find the difference in order of magnitude.

   50cm = 500mm

   $500 \div 05 = 1000$

   $1000 = 10^3$

   difference = 3 orders of magnitude

3. A leaf has a diameter of 20cm. A palisade cell has a diameter of 20μm. Find the difference in order of magnitude.

   20cm = 200 000μm

   $200\,000 \div 20 = 10\,000$

   $10\,000 = 10^4$

   difference = 4 orders of magnitude

Calculating Orders of Magnitude **Answers**

1. An animal cell has a diameter of 10μm. A mitochondrion has a diameter of 1μm. Find the difference in order of magnitude.

   $10 \div 1 = 10$

   $10 = 10^1$

   difference = 1 order of magnitude

2. A flea has a length of 0.5mm. A dog has a length of 50cm. Find the difference in order of magnitude.

   50cm = 500mm

   $500 \div 0.5 = 1000$

   $1000 = 10^3$

   difference = 3 orders of magnitude

3. A leaf has a diameter of 20cm. A palisade cell has a diameter of 20μm. Find the difference in order of magnitude.

   20cm = 200 000μm

   $200\,000 \div 20 = 10\,000$

   $10\,000 = 10^4$

   difference = 4 orders of magnitude