

[exponents] [powers of ten] [density] [QUESTIONS ONLY] [PRINT-FRIENDLY]

NAME	PERIOD	DATE
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PART A

A sample starts at 64 g. It is cut in half repeatedly.

- 1** How much remains after 1, 2, 3, and 4 cuts? Write a power-of-two expression for the amount after n cuts.

- 2** How many cuts are needed to reach 4 g?

PART B

A dust particle has a mass of 0.000000003 g. A grain of sand has a mass of 0.0004 g.

- 1** Write each mass in scientific notation.

- 2** How many powers of ten separate the two exponents?

Thirty Cuts - continued

PART C

Mystery metal

A metal cube has a mass of 270 g and a volume of 30 cm³.

1 Find its density in g/cm³.

2 A second cube has the same density and volume 12 cm³. Find its mass.

PART D

Count the atoms

A compound contains 2 aluminum atoms for every 3 oxygen atoms. A sample has 18 oxygen atoms.

1 How many aluminum atoms match the ratio?

2 If the sample has 10 formula units, how many total atoms are present?
