

Selected Answers

Matter and Change

Math Tutor Practice

- 5 significant figures
 - 4 significant figures
- 4.21 g/cm^3
 - 16.5 g

Measurements and Calculations

Practice Problems A

- 2.75 g/cm^3
- 1.14 g
- 5.60 mL

Practice Problems B

- 1645 cm, 0.01645 km
- 0.000 014 g

Practice Problems C

- 17%
- 2.7%

Practice Problems D

- 5
 - 6
 - 4
 - 1
 - 5
 - 6
- 7000 cm
 7000. cm
 - 7000.00 cm

Practice Problems E

- 2.156 g
- 85.6 cm
- $1.00 \mu\text{m}^2$
- 440 g

Practice Problems F

- 9.69 mL
- 1.67 g/cm^3
- $5.12 \times 10^{11} \text{ mm}$
- $5.2 \times 10^3 \text{ s}$

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- $7.45 \times 10^{-5} \text{ g}$
 - $5.984102 \times 10^6 \text{ nm}$
- -9.11×10^3
 - 8.25×10^{-2}

Atoms: The Building Blocks of Matter

Practice Problems A

- 35 protons, 35 electrons, 45 neutrons
- $^{13}_6\text{C}$
- phosphorus-30

Practice Problems B

- 126 g Fe
- 14.7 g K
- 0.310 g Na
- 957 g Ni

Practice Problems C

- 0.125 mol Ca
- $1.83 \times 10^{-7} \text{ mol Au}$
- 8.18×10^{-3}

Practice Problems D

- $2.49 \times 10^{-12} \text{ mol Pb}$
- $4.2 \times 10^{-21} \text{ mol Sn}$
- $1.66 \times 10^{24} \text{ atoms Al}$

Practice Problems E

- $7.3 \times 10^{-7} \text{ g Ni}$
- $7.51 \times 10^{22} \text{ atoms S}$
- 66 g Au

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- 2.25 g
 - 59 300 L
- $7.2 \times 10^1 \mu\text{g}$
 - $3.98 \times 10^3 \text{ km}$

Arrangement of Electrons in Atoms

Practice Problems A

- 7, 7, $\frac{\uparrow\downarrow}{1s}$, $\frac{\uparrow\downarrow}{2s}$, $\underbrace{\uparrow \uparrow \uparrow}_{2p}$
- 9, 2

Practice Problems B

- $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 4d^{10} 5s^2 5p^5$, [Kr] $4d^{10} 5s^2 5p^5$, 46
 - 27, 26, 1
- [Kr] $4d^{10} 5s^2 5p^2$, 2
 - 10, germanium