

Unit 01:
Scientific
Notation,
Data Analysis,
and Experimental
Error

Author: Steve Gibbs

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1. Unit 01: Scientific Notation, Data Analysis, and Experimental Error

4. Chapter: Unit 01: Scientific Notation, Data Analysis, and Experimental Error

1. Unit 01: Scientific Notation, Data Analysis, and Experimental Error Questions

4.1.1. Madje can measure lengths to within $200 \mu\text{m}$ (standard deviatio...

Author: Steve Gibbs

Madje can measure lengths to within $200 \mu\text{m}$ (standard deviation) using a custom ruler and magnifier. She measures the lengths of the base of a rectangle and the height of a rectangle to be 13.25 and 11.15 cm. What are the area and estimated standard error of that area?

Please choose only one answer:

- $147.7 \pm 4.0 \text{ cm}^2$
- $147.74 \pm 3.46 \text{ cm}^2$
- $147.74 \pm 0.40 \text{ cm}^2$
- $14.74 \pm 0.04 \text{ cm}^2$
- $147.74 \pm 0.04 \text{ cm}^2$

Check the answer of this question online at QuizOver.com:

Question: [Madje can measure lengths to within \$200 \mu\text{m}\$ Steve Gibbs @The Saylor](#)

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4.1.2. Pablo measures the diameter of a cylinder to be 11.91 ± 0.05 mm,...

Author: Steve Gibbs

Pablo measures the diameter of a cylinder to be 11.91 ± 0.05 mm. What is the area of the cylinder. Remember that there is only one independent measure of the diameter.

Please choose only one answer:

- 111.4 ± 0.935 mm²
- 11.4 ± 0.09 mm²
- 111.4 ± 0.094 mm²
- 111.4 ± 0.05 mm²
- 111.4 ± 0.25 mm²

Check the answer of this question online at QuizOver.com:

Question: [Pablo measures the diameter of a cylinder to Steve Gibbs Saylor Measurement](#)

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4.1.3. A small hydroelectric dam produces 90 megawatts of power. If a typi...

Author: Steve Gibbs

A small hydroelectric dam produces 90 megawatts of power. If a typical home in the area can consume 20kW at peak usage, how many such homes can the hydroelectric plant supply at peak usage?

Please choose only one answer:

- 5000
- 450
- 45,000
- 45
- 450,000

Check the answer of this question online at QuizOver.com:

Question: [A small hydroelectric dam produces 90 megawatts Steve @The Saylor](#)

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4.1.4. Calculate the mean and standard deviation of the following sample: ...

Author: Steve Gibbs

Calculate the mean and standard deviation of the following sample: 4.72, 4.83, 4.98, 5.07, 4.61, 2.05.

Please choose only one answer:

- 4.0, 1.0
- 1.33, 4.38
- 4.38, 1.33
- 4.37, 1.2
- 4.38, 1.15

Check the answer of this question online at [QuizOver.com](http://www.quizover.com):

Question: [Calculate the mean and standard deviation of Steve Gibbs Saylor Measurement](#)

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4.1.5. If there are 100,000,000,000 stars in a galaxy and 100,000,000,000 ...

Author: Steve Gibbs

If there are 100,000,000,000 stars in a galaxy and 100,000,000,000 galaxies in the universe, then how many stars are there in the universe?

Please choose only one answer:

- 10^{27}
- 10^{25}
- 10^{22}
- 10^{10}
- 10^5

Check the answer of this question online at QuizOver.com:

Question: [If there are 100 000 000 000 stars in a galaxy Steve @The Saylor](#)

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4.1.6. Calculate (within a factor of 100) the number of water molecules in...

Author: Steve Gibbs

Calculate (within a factor of 100) the number of water molecules in a fully grown human being. The mass of one water molecule is approximately 3×10^{-23} g and a human being may be considered to be 70% water.

Please choose only one answer:

- 10^{15}
- 10^{20}
- 10^{18}
- 10^{27}
- 10^{23}

Check the answer of this question online at QuizOver.com:

Question: [Calculate within a factor of 100 the number Steve Gibbs Saylor Measurement](#)

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