

Sig Fig Math & Review Practice

Name **KEY**

The accepted boiling point for an unknown liquid is 314°C. The table below provides data from three trials of three different students. *Use the text and table below to answer questions 1-3.*

	Khannar	Eloise	Jim
Trial 1	314 °C	275 °C	124 °C
Trial 2	314 °C	125 °C	125°C
Trial 3	314 °C	32 °C	123 °C

1) In terms of accuracy and precision, how would you describe Jim's data? Briefly explain your answer.

This data is NOT accurate because it is nowhere near the "answer" which is 314°C.
This data IS precise because the values are all near each other. A tight cluster.

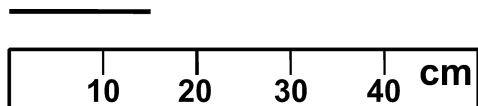
2) In terms of accuracy and precision, how would you describe Khannar's data? Explain your answer.

This data IS accurate because it hits the "answer" which is 314°C.
This data IS precise because the values are all exactly the same. A tight cluster.

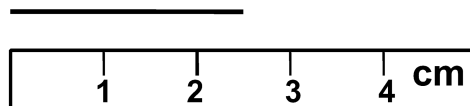
3) In terms of accuracy and precision, how would you describe Eloise's data? Briefly explain your answer.

This data is NOT accurate because it is nowhere near the "answer" which is 314°C.
This data is NOT precise because the values are nowhere near each other. They are all over the place.

Record the length of the line to the proper number of significant figures on the lines provided. Include units!



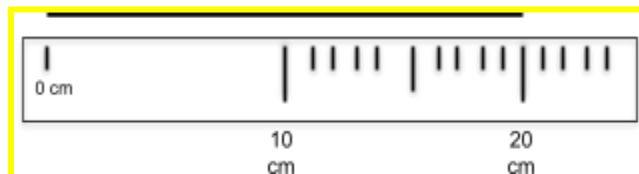
28) **14cm, 15cm, or 16cm**



29) **2.4cm, 2.5cm, or 2.6cm**

30) Mark the ruler on the right to show a measurement of 20.0 cm.

Certain: tens and ones
Estimated: Tenths



Perform the following calculations. Express your answer with the proper number of significant figures. Remember to include units with your answer!

7) $456.021 \text{ m} + 45.00 \text{ m} + 785.20 \text{ m} + 0.0059 \text{ m} + 95.1 \text{ m}$ **$1381.3269 \rightarrow 1381.3 \text{ m}$**

8) $9547.005 \text{ cm} - 45.120 \text{ cm} - 987.1 \text{ cm}$ **$8514.785 \rightarrow 8514.8 \text{ cm}$**

9) $485.3 \text{ m}^3 \div 25 \text{ m}^2$ **$19.412 \rightarrow 19 \text{ m}$** [VIDEO](#)

10) $3.99 \text{ miles} \times 90214 \text{ miles} \times 8675309 \text{ miles}$ **$3.12271 \times 10^{12} \rightarrow 3.12 \times 10^{12} \text{ mi}^3$**

11) $658.0 \text{ mL} + 23.5478 \text{ mL} + 1345.29 \text{ mL}$ **$2026.8378 \rightarrow 2026.8 \text{ mL}$**

12) $(3.48 \text{ g} \times 21.69 \text{ g}) / (2.9 \text{ g} \times 1.63 \text{ g})$ **$15.968098 \rightarrow 16$ (no units, they all cancel)**

13) $43.678 \text{ kg} \times 64.1 \text{ kg}$ **$2,799.7598 \rightarrow 2.80 \times 10^3 \text{ kg}$**

14) $3.00 \times 10^5 \text{ km/s} \left(\frac{0.26 \text{ mm}}{4812.63 \text{ mm}} \right)$ **$16.2073544 \rightarrow 16 \text{ km/s}$** [VIDEO](#)

15) Eugene P. Piccadilly performs an experiment in a beaker. He mixes 2.689 g of NaCl, 1.26 g of sand and 5.0 g of water. What is the total mass of the beaker's contents? Show all work.

$2.689 \text{ g} + 1.26 \text{ g} + 5.0 \text{ g} = 8.949 \rightarrow 8.9 \text{ g}$