

Module Assessment

Name _____

Date _____

- The orbit distance of Earth is approximately 1.5×10^8 km. The orbit distance of Neptune is approximately 4.5×10^9 km. Choose the correct statement.
 - The orbit distance of Neptune is approximately 3 times as long as the orbit distance of Earth.
 - The orbit distance of Neptune is approximately 30 times as long as the orbit distance of Earth.
 - The orbit distance of Earth is approximately $\frac{1}{3}$ times as long as the orbit distance of Neptune.
 - The orbit distance of Earth is approximately $\frac{1}{60}$ times as long as the orbit distance of Neptune.

- The Nile River is approximately 2.2×10^7 feet long. The Ohio River is approximately 5,200,000 feet long.

Part A

What is the approximate difference between the lengths of the two rivers? Write your answer in scientific notation.

_____ feet

Part B

What is a more reasonable unit of measurement for the lengths of the two rivers? Explain why you chose that unit.

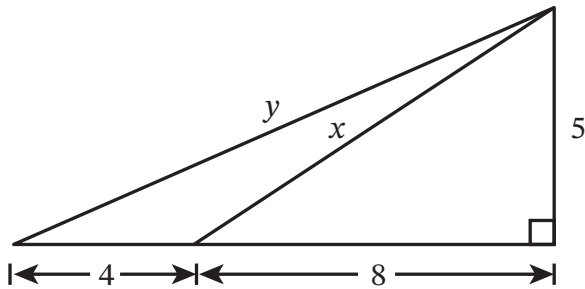
3. Find the quotient $(8.4 \times 10^{-5}) \div 0.002$. Write your answer in scientific notation.

4. The atomic radius of a cesium atom is 0.000 298 micrometers.

Round this atomic radius to the nearest ten thousandth micrometer. Write your answer in scientific notation.

5. Evaluate $\frac{(3^2)^3 \cdot 3^{-4}}{3}$.

6. Consider the diagram.



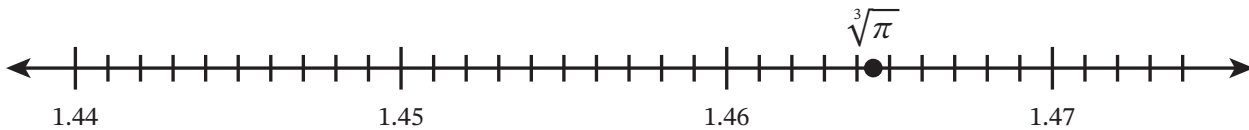
Find the values of x and y . If your answer cannot be expressed as a rational number, use square root notation to write the value.

The value of x is _____.

The value of y is _____.

7. Ava knows that the value of π rounded to the nearest whole number is 3. She says the value of $\sqrt[3]{\pi}$ is approximately 1.44 because $\sqrt[3]{3} \approx 1.44$.

Ava enters $\sqrt[3]{\pi}$ into a computer program to check her answer. The program displays this number line.



Part A

Based on the number line, what is the value of $\sqrt[3]{\pi}$ rounded to the nearest hundredth?

Part B

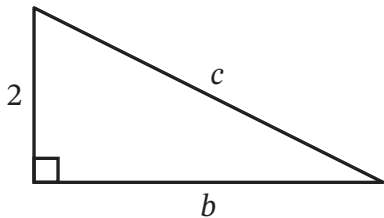
Why is Ava's value of $\sqrt[3]{\pi}$ different from the computer's value of $\sqrt[3]{\pi}$? Justify your answer.

8. Evaluate $(7.6 \times 10^{-4}) + (3.8 \times 10^{-4})$. Write your answer in scientific notation.

9. Match each square root with its approximate value.

Expression	Approximate Value
$\sqrt{10} + 1$	2.9
$\sqrt{15}$	3.9
$\sqrt{25}$	4.2
$\sqrt[3]{25}$	5

10. In the triangle shown, the value of b is greater than or equal to 3 and less than or equal to 5.



Noor says the value of c could be 4. Logan says the value of c could be greater than 5. Who is correct? Explain.

11. Scientists discovered a frog that has a length of about 8.75×10^{-3} yards. Maya says yards is not an appropriate unit of measurement for the length of the frog.

What is a more appropriate unit of measurement? Explain why you chose that unit. Find the length of the frog in your chosen unit.