

Name: _____

1. Tell whether the numbers in the following are exact or approximate.
 - a. The boiling temperature of the liquid is 140.23 degrees F. _____
 - b. The savings account balance is 140.23 dollars. _____
2.
 - a. The approximate number 240000 is accurate to _____ and precise to _____ .
 - b. The approximate number 571.46 is accurate to _____ and precise to _____ .
3. Use the calculator and correctly round the result of these arithmetic problems involving approximate numbers.
 - a. $260 + 32.96$
 - b. $70.3 - 6.448$
 - c. $260 * 32.96$
 - d. $70.3 / 6.448$
4. Simplify these expressions involving exponents. End up with only positive exponents.
 - a. $(4 a^2)^3$
 - b. $\frac{(2a^2b)^4}{4^0 a^3 b^{-5}}$
5. Use the calculator and correctly round the result of this arithmetic problem involving approximate numbers.
 - a. $\frac{21.55+24.79-46.31}{0.12345}$
6. Change these numbers between scientific and ordinary notation.
 - a. The speed of light is 300,000,000 meters/second.
 - b. Among the stars nearest earth, Centaurus A is about 4.07×10^{13} km away.
 - c. The diameter of a certain hydrocarbon is 0.00000026 mm.
 - d. My old computer could do an addition in 3.1×10^{-10} seconds.

7. Uranium is used in nuclear reactors to generate electricity. About 0.000000039% of the uranium disintegrates each day. How much of 0.000626 grams of uranium disintegrates in one day? (Convert both numbers to scientific notation and leave the result in scientific notation.)

8. Simplify these radicals.

a. $\sqrt[3]{-64}$

b. $\sqrt{81}$

c. $\sqrt[5]{100^5}$

d. $\sqrt{8^2+6^2}$

e. $\sqrt{-25}$

f. $-\sqrt{25}$

g. $\frac{4^3\sqrt{36}}{6^4\sqrt[6]{64}}$

9. Use a calculator to find each square root of these approximate numbers.

a. $\sqrt{14.75} - \sqrt{6.251}$

b. $\sqrt{14.75 - 6.251}$