

Warm up:

Write the following numbers in scientific notation.

1) 563,000

$$5.63 \times 10^5$$

2) 0.00028

$$2.8 \times 10^{-4}$$

Write the following numbers in standard form.

3) 6.62×10^7

$$66,200,000$$

4) 3.9×10^{-5}

$$0.000039$$

$$\begin{array}{r} \text{a) } 8 - 2n^3 = -46 \\ \underline{-8 \qquad \qquad -8} \\ -2n^3 = -54 \\ \underline{-2 \qquad \qquad -2} \\ \sqrt[3]{n^3} = \sqrt[3]{27} \\ \text{\textcircled{n=3}} \end{array}$$

⑫

$$\sqrt[3]{y} - 6 = -3$$

$$+6 \quad +6$$
$$(\sqrt[3]{y})^3 = (3)^3$$

$$y = 27$$

$$\begin{aligned} \textcircled{4} \quad & 7 - \sqrt[3]{r} = 12 \\ & -7 \qquad \qquad -7 \\ \hline & -\sqrt[3]{r} = 5 \\ & \frac{-\sqrt[3]{r}}{-1} = \frac{5}{-1} \\ \hline & (\sqrt[3]{r})^3 = (-5)^3 \\ & r = -125 \end{aligned}$$

Showdown



$$4x^7 \cdot 9x^9$$
$$36x^{16}$$

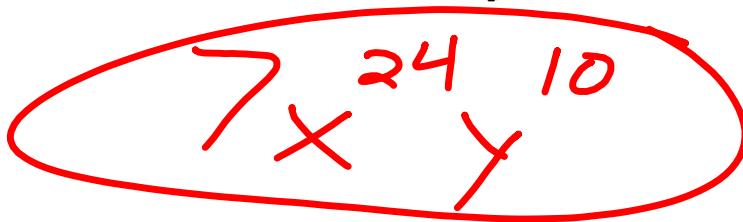
$$4^0$$

|

Write x^{-4} using positive exponents.

$$x^{-4} = \frac{1}{x^4}$$

$$\frac{14x^{16}y^{12}}{2x^{-8}y^2}$$



7x²⁴y¹⁰

$$\left(-4x^3y^{11}\right)^2$$

$$16x^6y^{22}$$

$$6^{-2} = \frac{1}{36}$$

A calculator displays 5.7E12. What number does this represent?

$$5.7 \times 10^{12}$$

$$x^6 \cdot x^4$$

$$x^{10}$$

A spaceship travels 4.2×10^{12} mi in 7×10^6 h.
What was the average speed for the trip?

$$d = r \cdot t$$
$$\frac{4.2 \times 10^{12}}{7 \times 10^6} = \frac{r(7 \times 10^6)}{7 \times 10^6}$$
$$0.6 \times 10^6 = r$$
$$6 \times 10^5 \text{ mi/h}$$

A calculator displays 4E9. What number does this represent?

$$4 \times 10^9$$

$$\frac{x^{15}}{x^5} = x^{10}$$

Solve.

$$4x^3 + 2 = 258$$

$$\begin{array}{r} -2 \quad -2 \\ \hline 4x^3 = 256 \\ \hline \frac{4x^3}{4} = \frac{256}{4} \end{array}$$

$$\sqrt[3]{x} = \sqrt[3]{64}$$

$$x = 4$$

$$\left(x^8\right)^3$$

Solve.

$$6 - x^2 = -19$$

$$\left(4 \times 10^5\right)\left(6 \times 10^{12}\right)$$

The average person takes 4×10^3 steps each day.
How many steps would an average person expect to take in a year?

$$q^7 r^9 \cdot q^6 r$$

$$(3x^6)^3$$

$$\frac{b^{16}}{b^4}$$

$$(4 \times 10^6)(3 \times 10^{-14})$$

