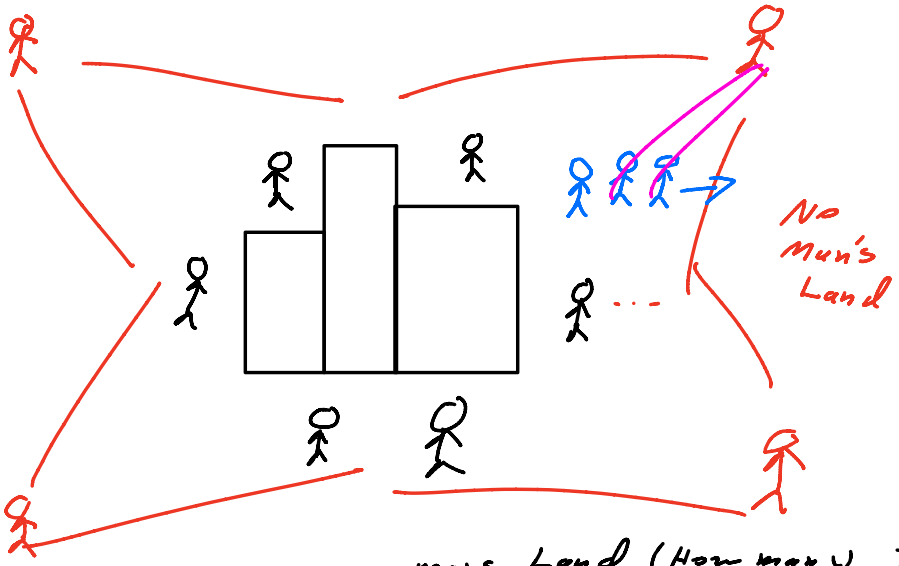
Period 4, 8/22/24

Simplify the exponential expression. Assume that the variable represents a nonzero real number.

$(-3y^{-1})^{-3} = (-3)^{-3} \cdot (y^{-1})^{-3} = \frac{1}{(-3)^3} \cdot \left(\frac{1}{y}\right)^{-3} = \frac{y^3}{-3^3} = \frac{y^3}{-27}$

$(-3y^{-1})^{-3} = -\frac{y^3}{27}$ (Type exponential notation with positive exponents. Use integers or fractions for any numbers in the expression.)



No mans Land (How many To get one out alive)

$\sqrt[n]{a^5 b^4 c^7}$ ← How many people in your group

$\sqrt[4]{243a^2b^7c^{13}} = \sqrt[4]{3^5a^2b^7c^{13}} = \sqrt[4]{3\cdot3\cdot3\cdot3\cdot3\cdot a\cdot a\cdot b\,b\,b\,b\,b\,b\,b\,c\,c\,c\,c\,c\,c\,c\,c\,c\,c\,c\,c}$

$3bc\cdot cc\sqrt[4]{3\cdot aa\cdot bbb\cdot c}$

$3bc^3\sqrt[4]{3a^2b^3c}$

$\sqrt[4]{243a^2b^7c^{13}} = \sqrt[4]{3^5a^2b^7c^{13}} = 3^{\frac{5}{4}}a^{\frac{2}{4}}b^{\frac{7}{4}}c^{\frac{13}{4}}$

$3^{1\frac{1}{4}}a^{\frac{2}{4}}b^{1\frac{3}{4}}c^{3\frac{1}{4}}$

$$\frac{7}{\sqrt[4]{27a^2}} = \frac{7}{\sqrt[4]{3^3a^2}} \cdot \frac{\sqrt[4]{3^1a^2}}{\sqrt[4]{3^1a^2}} = \frac{7\sqrt[4]{3a^2}}{\sqrt[4]{3^4a^4}} = \boxed{\frac{7\sqrt[4]{3a^2}}{3a}}$$

$$\frac{5}{(\sqrt{7}-a)(\sqrt{7}+a)} = \frac{5(\sqrt{7}+a)}{7+a\sqrt{7}-a\sqrt{7}-a^2}$$

$a^2-b^2 = (a-b)(a+b)$

$$\frac{5(\sqrt{7}+a)}{7-a^2}$$

$(3^4 \cdot 3^7) = 3^{11}$

$(3^4)^7 = 3^4 \cdot 3^4 \cdot 3^4 \cdot 3^4 \cdot 3^4 \cdot 3^4 \cdot 3^4 = 3^{28}$

$3^{-3} = \frac{1}{3^3} = \frac{1}{27}$

$$\frac{5a^{-4}b^2c^3}{16a^{-3}b^7c^{-6}} = \frac{5a^3b^2c^3 \cdot c^6}{16a^4b^7} = \frac{5aabbccccccccc}{2^4aaaabbbbbbb}$$

$$\frac{5c^9}{2^4ab^5}$$

2,735,169,048,200,000

$2.73516904820 \cdot 10^{14} \Rightarrow 2.73516904820000$

0.000000000007369 1

$7.3691 \cdot 10^{-10} \Rightarrow$ 0000000007.3691

$\left(\frac{x^6 y^2 z^4}{x^{-6} y^{-2} z^{-4}}\right)^{-3} = \left(\frac{x^6 \cdot x^6 \, y^2 \cdot y^2 \, z^4 \cdot z^4}{1}\right)^{-3} = \left(x^{12} y^4 z^8\right)^{-3}$

$x^{-36} y^{-12} z^{-24} = \frac{1}{x^{36} y^{12} z^{24}}$

$\frac{1.2 \times 10^{-2}}{2.4 \times 10^{-9}} = \frac{(1.2) \cdot 10^9}{(2.4) \cdot 10^2} = .5 \cdot 10^7 =$ 5000000.