

1. Let $a$ and$ b$ be numbers and $b\ne 0$, and let $m $and $n$ be positive integers. Write each expression using the fewest number of bases possible:



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| $$\left(-19\right)^{5}∙\left(-19\right)^{11}=$$ | $$2.7^{5}×2.7^{3}=$$ |
| $$\frac{7^{10}}{7^{3}}=$$ | $$\left(\frac{1}{5}\right)^{2}∙\left(\frac{1}{5}\right)^{15}=$$ |
| $$\left(-\frac{9}{7}\right)^{m}∙\left(-\frac{9}{7}\right)^{n}=$$ | $$\frac{ab^{3}}{b^{2}}=$$ |

1. Let the dimensions of a rectangle be $\left(4×\left(871209\right)^{5}+ 3×49762105\right) ft.$ by $\left(7×\left(871209\right)^{3}-\left(49762105\right)^{4}\right) ft.$ Determine the area of the rectangle. (Hint: You do not need to expand all the powers.)

1. A rectangular area of land is being sold off in smaller pieces. The total area of the land is $2^{15}$ square miles. The pieces being sold are $8^{3}$ square miles in size. How many smaller pieces of land can be sold at the stated size? Compute the actual number of pieces. (hint: change the $8^{3}$ to a base with 2 first)

