

## Simplifying Numeric Exponentials

**Problem 1** Compute the following numeric exponential value.

- $7^5 = \boxed{16807}$
- $\left(\frac{1}{7}\right)^5 = \boxed{\frac{1}{16807}}$
- $(7)^{-5} = \boxed{\frac{1}{16807}}$
- $\left(\frac{1}{7}\right)^{-5} = \boxed{16807}$

**Feedback(attempt):** Remember that you can distribute a power over the top and bottom of a fraction, and that negative powers “flip” a fraction. So for example,  $\left(\frac{1}{2}\right)^{-5} = \left(\frac{2}{1}\right)^5 = \frac{2^5}{1^5} = \frac{32}{1} = 32$ .

**Problem 2** Compute the following numeric exponential value.

- $2^2 = \boxed{4}$
- $\left(\frac{1}{2}\right)^2 = \boxed{\frac{1}{4}}$
- $(2)^{-2} = \boxed{\frac{1}{4}}$
- $\left(\frac{1}{2}\right)^{-2} = \boxed{4}$

**Feedback(attempt):** Remember that you can distribute a power over the top and bottom of a fraction, and that negative powers “flip” a fraction. So for example,  $\left(\frac{1}{2}\right)^{-5} = \left(\frac{2}{1}\right)^5 = \frac{2^5}{1^5} = \frac{32}{1} = 32$ .

**Problem 3** Compute the following numeric exponential value.

- $3^0 = \boxed{1}$
- $\left(\frac{1}{3}\right)^0 = \boxed{1}$

### Simplifying Numeric Exponentials

- $(3)^{-0} = \boxed{1}$
- $\left(\frac{1}{3}\right)^{-0} = \boxed{1}$

**Feedback(attempt):** Remember that you can distribute a power over the top and bottom of a fraction, and that negative powers “flip” a fraction. So for example,  $\left(\frac{1}{2}\right)^{-5} = \left(\frac{2}{1}\right)^5 = \frac{2^5}{1^5} = \frac{32}{1} = 32$ .

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**Problem 4** Compute the following numeric exponential value.

- $4^4 = \boxed{256}$
- $\left(\frac{1}{4}\right)^4 = \boxed{\frac{1}{256}}$
- $(4)^{-4} = \boxed{\frac{1}{256}}$
- $\left(\frac{1}{4}\right)^{-4} = \boxed{256}$

**Feedback(attempt):** Remember that you can distribute a power over the top and bottom of a fraction, and that negative powers “flip” a fraction. So for example,  $\left(\frac{1}{2}\right)^{-5} = \left(\frac{2}{1}\right)^5 = \frac{2^5}{1^5} = \frac{32}{1} = 32$ .

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