Exercise 7

Yes or No? If *No*, give a reason.

(a) Is the expression $\left(\frac{2}{3}\right)^{-2}$ equal to $\frac{3}{4}$?

(b) Is there a difference between $(-5)^4$ and -5^4?

Solution

Evaluate $\left(\frac{2}{3}\right)^{-2}$.

$$\left(\frac{2}{3}\right)^{-2} = \left(\frac{3}{2}\right)^{2} = \frac{3^2}{2^2} = \frac{9}{4}$$

The expression $\left(\frac{2}{3}\right)^{-2}$ is not equal to $\frac{3}{4}$.

$$(-5)^4 = (-5)(-5)(-5)(-5) = 625$$

$$-5^4 = -5 \cdot 5 \cdot 5 \cdot 5 = -625$$

There is a difference between $(-5)^4$ and -5^4.

(a) No

(b) Yes