

**Exercise 2**

(a) When we multiply two powers with the same base, we \_\_\_\_\_ the exponents. So  
 $3^4 \cdot 3^5 = \underline{\hspace{2cm}}$ .

(b) When we divide two powers with the same base, we \_\_\_\_\_ the exponents. So  
 $\frac{3^5}{3^2} = \underline{\hspace{2cm}}$ .

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**Solution**

When we multiply two powers with the same base, we add the exponents. So  
 $3^4 \cdot 3^5 = 3^{4+5} = 3^9 = 19\,683$ .

When we divide two powers with the same base, we subtract the exponents. So  
 $\frac{3^5}{3^2} = 3^{5-2} = 3^3 = 27$ .