

The Product Rule

GGG 5.2 A

A. 1. Explain why each of the following statements is true.

a. $2^3 \times 2^2 = 2^5$

b. $3^4 \times 3^3 = 3^7$

c. $6^3 \times 6^5 = 6^8$

2. Give another example that fits the pattern in part (1).

3. Complete the following equation to show how you can find the exponent of the product when you multiply two powers with the same base. Explain your reasoning.

$$a^m \times a^n = a^{\blacksquare}$$

When multiplying _____ with the same _____,

the _____ remains the same and the new _____

becomes the _____ of the exponents.

Explain in your own words why this rule works. Then give an example that you create to illustrate the rule.