

6.1

Ordering Numbers with Exponents

• Example 1

Use $<$, $>$, or $=$ to make the following statements true.

(a) $3^2 \times 9^2$ ____ 27^2

Rewriting, we have

$$3^2 \times 9^2 = (3 \times 9)^2 = 27^2$$

so that $3^2 \times 9^2 = 27^2$

(b) $3^3 \times 9^2$ ____ 27^2

$$3^3 \times 9^2 > 3^2 \times 9^2 = (3 \times 9)^2 = 27^2$$

$$3^3 \times 9^2 > 27^2$$

● ● ● CHECK YOURSELF 1

Use $<$, $>$, or $=$ to make the following statements true.

a. $2^4 \times 4^2$ ____ 8^4 b. $2^4 \times 4^4$ ____ 8^4

● ● ● CHECK YOURSELF ANSWER

1. (a) $2^4 \times 4^2 < 8^4$; (b) $2^4 \times 4^4 = 8^4$.

6.1 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

Use $<$, $>$, or $=$ to make the following statements true.

1. $4^2 \times 2^2$ _____ 2^4

2. $2^3 \times 4^3$ _____ 8^3

3. $2^4 \times 2^2$ _____ 4^4

4. $8^2 \times 2^2$ _____ 4^4

5. $4^4 \times 4^2$ _____ 8^4

6. $4^2 \times 4^3$ _____ 16^5

7. $2^3 \times 2^4$ _____ 8^2

8. $3^4 \times 9^2$ _____ 81^2

9. $5^3 \times 10^3$ _____ 25^3

10. $6^3 \times 6$ _____ 36^2