

4. Write $0.\overline{15}$ as a fraction in simplest form.

(Lesson 1) $\frac{5}{33}$

$$\begin{array}{r} 100N \\ \hline 1N \end{array} = \begin{array}{r} 15.151515\dots \\ \hline .151515\dots \end{array}$$

$$\frac{99N}{99} = \frac{15}{99}$$

$$N = \frac{15}{99} \div 3 = \frac{5}{33}$$

Mid-Chapter Check

Vocabulary Check

1. **MP Be Precise** Define *power* using the words *base* and *exponent*. Give an example of a power and label the base and exponent. (Lesson 2)

Sample answer: A power is when a number, called the base, is multiplied by itself a number of times. The number of times the base is a factor is the exponent. In 5^2 , 5 is the base, 2 is the exponent.

2. Describe the Product of Powers rule. Give an example. (Lesson 3)

Sample answer: The Product of Powers rule allows you to multiply powers with the same base, for example, $3^4 \cdot 3^6 = 3^{10}$.

Skills Check and Problem Solving

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3. Write $1\frac{7}{16}$ as a decimal. (Lesson 1) 1.4375



4. Write $0.\overline{15}$ as a fraction in simplest form.

(Lesson 1) $\frac{5}{33}$

5. The mass of a baseball glove is $5 \cdot 5 \cdot 5 \cdot 5$ grams. Write the mass using exponents. Then find the value of the expression. (Lesson 2) 5^4 ; 625

Simplify using the Laws of Exponents. (Lessons 3 and 4)

6. $2^3a^7 \cdot 2a^3 =$ 2^4a^{10} or $16a^{10}$

7. $\frac{24y^4}{4y^2} =$ $6y^2$

8. $(2p^3r^2)^3 =$ $8p^9r^6$

9. **MP Persevere with Problems** Write two algebraic expressions, one with a quotient of x^5 and one with a product of x^5 . (Lesson 3)

Sample answer: $\frac{x^8}{x^3}$ and $x^2(x^3)$

