Chapter 7 Review

Rules of Exponents

Exponent Rules

When you are multiplying variables you add their exponents

1. True
2. False
3. Not enough information to tell

Exponent Rules

When you are multiplying variables you add their exponents

1. True
2. False
3. **Not enough information to tell – they must have the same bases**

Exponent Rules

If a variable expression has a negative exponent in a denominator, you move it to the numerator and make it positive

1. True
2. False
3. Not enough information to tell

Exponent Rules

If a variable expression has a negative exponent in a denominator, you move it to the numerator and make it positive

1. **True**
2. False
3. Not enough information to tell

Exponent Rules

When dividing variable expressions with exponents, you subtract your exponents

1. True
2. False
3. Not enough information to tell

Exponent Rules

When dividing variable expressions with exponents, you subtract your exponents

1. True
2. False
3. **Not enough information to tell – must have the same bases**

Exponent Rules

When raising an expression with an exponent to a power you add your exponents.

1. True
2. False
3. Not enough information to tell

Exponent Rules

When raising an expression with an exponent to a power you add your exponents.

1. True
2. False – you multiply
3. Not enough information to tell

Exponent Rules

Anything raised to the zero power equals zero

1. True
2. False
3. Not enough information to tell

Exponent Rules

Anything raised to the zero power equals zero

1. True
2. False – it equals 1
3. Not enough information to tell

Evaluate the expression xy^{-1} for $x = 2$ and $y = 3$

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$$\frac{2}{3}$$

Simplify $\frac{3^{-2}b^2}{a^0b^2}$

Simplify $\frac{3^{-2}b^2}{a^0b^2}$

$\frac{1}{9}$

Simplify: $\frac{-6}{-6^{-1}}$

Simplify: $\frac{-6}{-6^{-1}}$

36

Write 26×10^{-2} in standard form

Write 26×10^{-2} in standard form

.26

Write $.2584 \times 10^3$ in standard form

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258.4

Simplify: $90(1.2 \times 10^{-5})$. Write answer in scientific notation.

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$1.08 * 10^{-3}$

A microscope set on 1000X makes an object appear 1000 times its actual size. If bacterium is 8×10^{-4} millimeters in diameter, how large will it appear under the microscope? Use scientific notation.

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$8 * 10^{-1}$

In the 2000 Olympics the winning time for the 100-meter race was 1.79×10^{-1} min. What is this in standard form?

In the 2000 Olympics the winning time for the 100-meter race was 1.79×10^{-1} min. What is this in seconds?

.179 minutes = 10.74 seconds

Approximately 4.7×10^7 disposable diapers are thrown away each day in the US. About how many are thrown away in one year in scientific notation?

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$1.7155 * 10^{10}$

Which expression is NOT equal to $25n^{12}$

1. $(5n^6)^2$
2. $(5n^3)(5n^9)$
3. $25(n^3)^9$
4. $5^2(n^2)^6$

Which expression is NOT equal to $25n^{12}$

1. $(5n^6)^2$
2. $(5n^3)(5n^9)$
3. **$25(n^3)^9 = 25n^{27}$**
4. $5^2(n^2)^6$

Does $(x^2 + 3y)^2$ equal $x^4 + 9y^2$?

1. Yes
2. No
3. Not enough information to tell

Does $(x^2 + 3y)^2$ equal $x^4 + 9y^2$?

1. Yes
2. **No – the addition sign is not a part of any exponent rules we have learned**
3. Not enough information to tell

Simplify $\frac{(-6)^5}{6^5}$

Simplify $\frac{(-6)^5}{6^5}$

-1

Find the value of x if $2x^{-3} = 1/4$

Find the value of x if $2x^{-3} = 1/4$

X = 2

Simplify $-3a^{-8} * cb^{-3} * b^{12} * 9c^{5}$

Simplify $-3a^{-8} * cb^{-3} * b^{12} * 9c^{5}$

$$\frac{-27b^{9}c^{6}}{a^{8}}$$

Simplify $b^{-4}c^{0}d^{6}$

Simplify $b^{-4}c^{0}d^{6}$

$$\frac{d^{6}}{b^{4}}$$

Simplify: $\frac{x^{-2}}{y^{-8}}$

Simplify: $\frac{x^{-2}}{y^{-8}}$

$$\frac{y^{8}}{x^{2}}$$

Simplify: $7k^{-8}h^{3}$

Simplify: $7k^{-8}h^{3}$

$$\frac{7h^{3}}{k^{8}}$$

Simplify: $\frac{1}{p^2 q^{-4} r^0}$

Simplify: $\frac{1}{p^2q^{-4}r^0}$

$$\frac{q^4}{p^2}$$

Simplify $(2/5)^{-4}$

Simplify $(2/5)^{-4}$

$$\frac{5^4}{2^4} = \frac{625}{16}$$

Simplify $(-2)^{-3}$

Simplify $(-2)^{-3}$

$$\frac{-1}{8}$$

Simplify -2^{-4}

Simplify -2^{-4}

$$\frac{-1}{16}$$

Simplify $7^{-2}y^{-4}$

Simplify $7^{-2}y^{-4}$

$$\frac{1}{49y^4}$$

Simplify $(9w^{-4})(x^{-2}y^{7})$

Simplify $(9w^{-4})(x^{-2}y^{7})$

$$\frac{9y^{7}}{w^{4}x^{2}}$$

Simplify: $(2d)^3(3d^2)$

Simplify: $(2d)^3(3d^2)$

$24d^5$

Simplify $(q^{3r})^4$

Simplify $(q^{3r})^4$

q^{12r}

Simplify $(5c^{-4})(-4m^2c)$

Simplify $(5c^{-4})(-4m^2c)$

$$\frac{-20m^2}{c^3}$$

Simplify: $[(1.34^{2})^{5}](1.34^{-8})$

Simplify: $[(1.34^{2})^{5}](1.34^{-8})$

1.34^{2}

or

1.7956

Simplify $(12x^{2}y^{-2})^{5}(4xy^{-3})^{-8}$

Simplify $(12x^2y^{-2})^5(4xy^{-3})^{-8}$

$$12^5x^{10}y^{-10} * 4^{-8}x^{-8}y^{24}$$

$$\frac{3^5\,4^5\,x^2\,y^{14}}{4^8}$$

$$3^5x^2y^{14} \,/\, 4^3$$

Simplify: $(-2r^{-4})^{2}(-3r^{2}z^{8})^{-1}$

Simplify: $(-2r^{-4})^2(-3r^2z^8)^{-1}$

$$\frac{4}{-3 * r^8 * r^2 * z^8} = \frac{4}{-3r^{10}z^8}$$

Simply: $\frac{w^2}{w^5}$

Simply: $\frac{w^2}{w^5}$

$$\frac{1}{w^3}$$

Simplify: $\frac{21x^3}{3x}$

Simplify: $\frac{21x^3}{3x}$

$7x^2$

Simplify: $\left[n^5/v^3\right]^7$

Simplify: $\left[n^5/v^3\right]^7$

$$\frac{n^{35}}{v^{21}}$$