Grade 8 Unit 2 Week 2

Parents: Please help your child choose the most appropriate assignment(s) to complete each day. When the day's assignment is done, students finish the two reflection statements on this page.

Please note Extra Practice activities are on-level for the grade level. Re-Engage activities give students additional support.

		Monday	Tuesday	Wednesday	Thursday	Friday
	Topic	Simplify expressions using the properties of exponents.	Simplify expressions using the properties of exponents when dividing.	Evaluate expressions with zero and negative exponents.	Solve equations using square roots.	Solve equations using square and cube roots.
	Assignment	Unit 2 Lesson 2 Re-Engage A Re-Engage B Extra Practice	Unit 2 Lesson 4 Re-Engage Extra Practice	Unit 2 Lesson 6 Re-Engage Unit 2 Lesson 7 Re-Engage Extra Practice	Unit 2 Lesson 9 Re-Engage A Re-Engage B	Unit 2 Lesson 11 Re-Engage C Extra Practice
Video	link	Unit 2 Lesson 2	<u>Unit 2 Lesson 4</u>	<u>Unit 2 Lesson 6</u> <u>Unit 2 Lesson 7</u>	Unit 2 Lesson 9	<u>Unit 2 Lesson 11</u>
	L	One thing I was successful with is	One thing I was successful with is	One thing I was successful with is	One thing I was successful with is	One thing I was successful with is
	Reflection	One thing I need more help with is	One thing I need more help with is	One thing I need more help with is	One thing I need more help with is	One thing I need more help with is

Find this packet on swunmath.com. Click on the hyperlinks to jump to the lesson videos.



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Date:

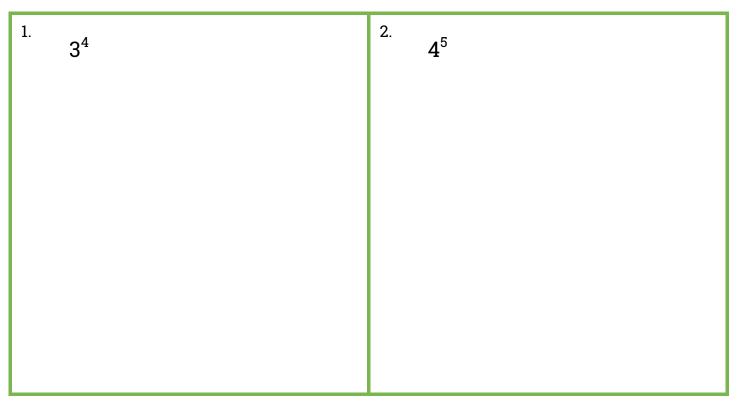
Model

2⁵ Directions: Expand and solve.

Step 1. Rewrite 2⁵ as the expanded version of 2 multiplied by itself 5 times

Step 2. Multiply $2 \times 2 \times 2 \times 2 \times 2 = 32$

Structured Guided Practice







^{1.} 7 ³	^{2.} 8 ³
^{3.} 6 ³	4. 3 ⁵
^{5.} 2 ⁶	^{6.} 5 ⁴



Re-Engage Unit 2 Lesson 1-2b: Expand Exponents of Negative Numbers



Name:

Date:

Model

Model	1	

Directions: Expand and solve.

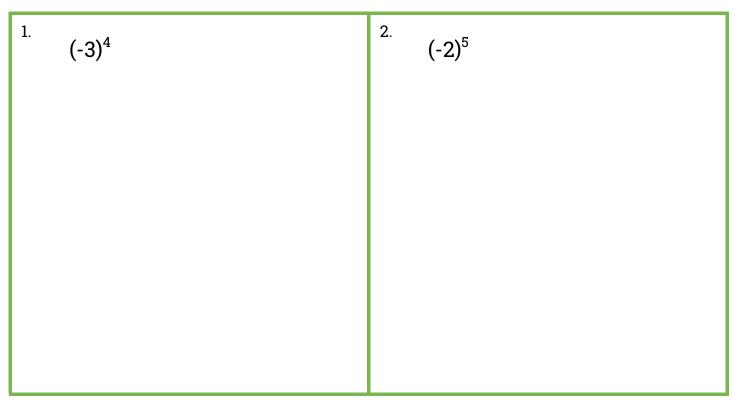
Step 1. Rewrite (–6)⁴ as the expanded version of (–6) multiplied by itself 4 times

 $(-6)^4$

Step 2. Multiply (-6) × (-6) × (-6) × (-6) 36 × 36 = 1296

Model 2		
(-4) ³		
Directions: Expand and solve.		
Step 1. Rewrite (–4) ³ as the expanded version of –4 multiplied by itself 3 times		
Step 2. Multiply (-4) × (-4) × (-4) 16 × (-4) = -64		

Structured Guided Practice









1.	(-7) ³	2.	(-8) ³
3.	(-6) ³	4.	(-3) ⁵
5.	(-2) ⁶	6.	(-5) ⁴



Extra Practice

Unit 2 · Lesson 1-2: Properties of Exponents: Multiplication

Ŵ	Name:	_
	Date:	

Directions: Simplify. Write solution in exponential and standard form.

1. 5 ² ⋅ 5 ³	2. (4n) ²
3. (-4) ⁴ (-4) ²	4. (z ⁴ t) ³
5. (m ⁴) ⁵	6. ((3) ³) ⁴



Re-Engage Unit 2 Lesson 4: Dividing Exponents (Using Properties)



Name:			
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Date:

Model

Example #1 Since, $\frac{n^{5}}{n^{3}} = \frac{n \cdot n \cdot n \cdot n \cdot n \cdot n}{n \cdot n \cdot n \cdot n} = n^{2}$ Then,

$$\frac{n^5}{n^3} = n^{5-3} = n^2$$

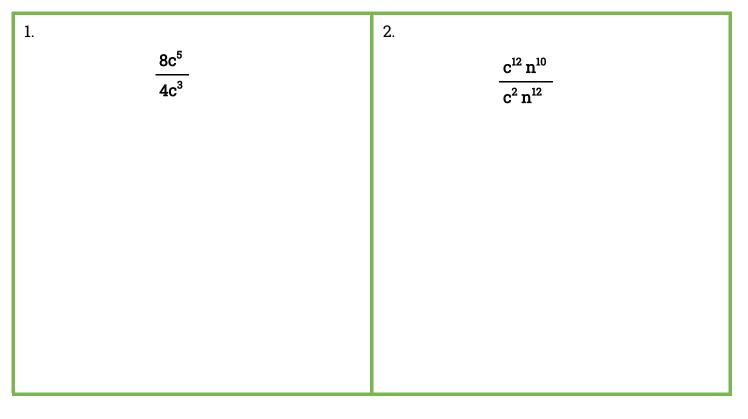
Example #2

*The <u>Division Property of Exponents</u> states to subtract exponents with like bases.

$$\frac{c^4 n^5}{c^2 n^3} = c^{4-2} n^2$$

Structured Guided Practice

Directions: Divide. Keep answers in exponential form.



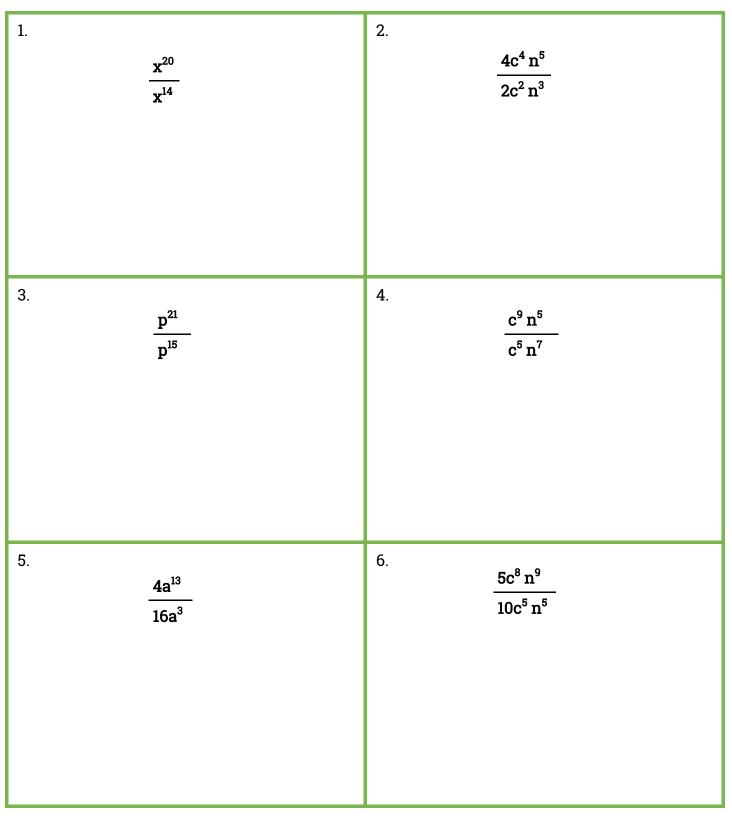


Re-Engage Unit 2 Lesson 4: Dividing Exponents (Using Properties)



Student Practice

Directions: Divide.



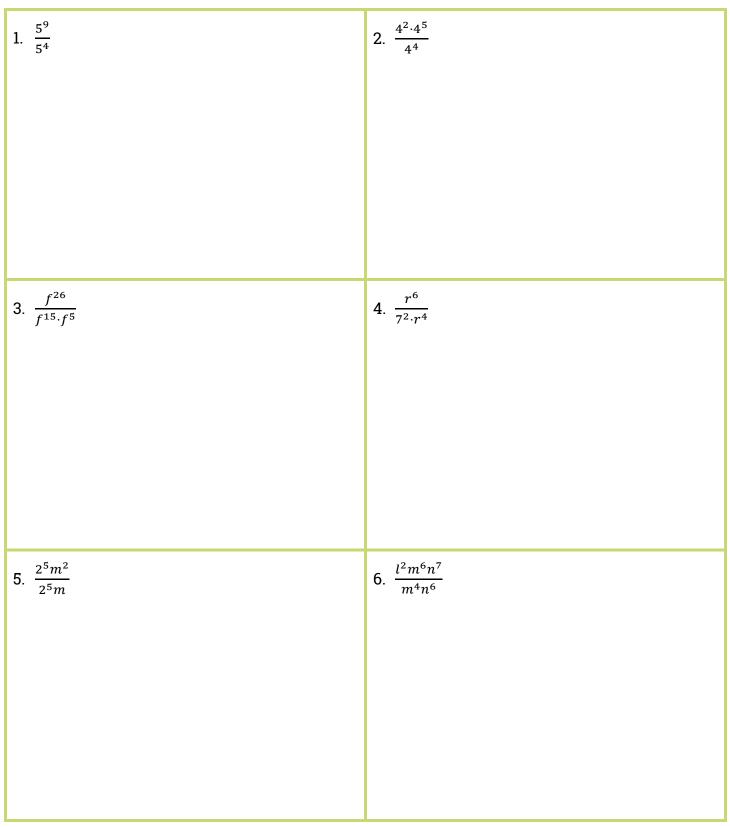




Name:

Date:

Directions: Simplify. Write answer in standard form.



Re-Engage Unit 2 Lesson 6: Convert Negative Exponents



Name:

Date:

Model

Expand Strategy

A negative exponent means how many times to DIVIDE a number.

$$2^{-3} = 1 \div 2 \div 2 \div 2 = \frac{1}{2^3}$$

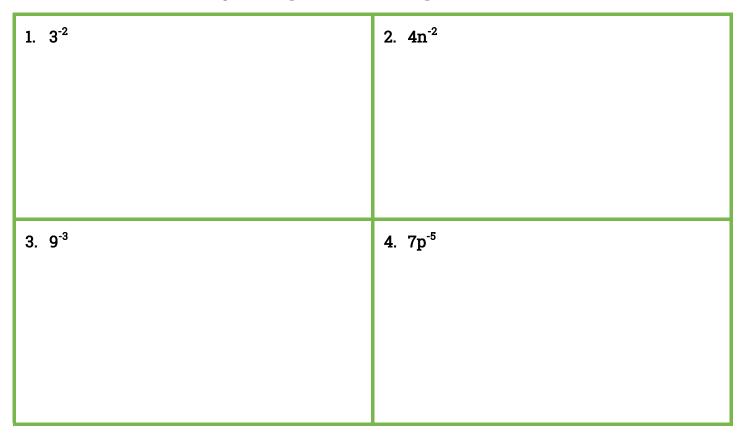
Reciprocal Strategy

A negative exponent also means that the base is on the wrong side of the fraction line, so you need to flip the base to the other side.

$$5^{-2} = \frac{5^{-2}}{1} = \frac{1}{5^2}$$

Structured Guided Practice

Directions: Rewrite the negative exponent to make a positive one.







Directions: Rewrite each exponent to make a positive one.

1. 2 ⁻⁸	2. 6x ⁻⁷
3. 4 ⁻⁵	48n ⁻²
55 ⁻³	6. 3m ⁻⁷



Re-Engage Unit 2 Lesson 7: Multiply & Divide Negative Exponents

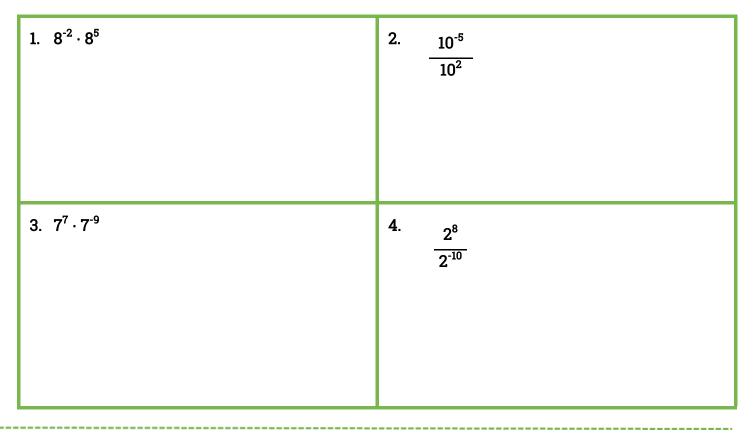


Name:

Date:

Expanded Strategy: Multiply Expanded Strategy: Divide Step 1: Rewrite showing only positive exponents. Step 1: Rewrite showing only positive exponents. $\frac{5^3}{5^{-2}} = 5^3 \div \frac{1}{5^{-2}} = 5^3 \div \frac{5^2}{1}$ $2^{-3} \cdot 2^4 = \frac{1}{2^3} \cdot 2^4$ Step 2: Write the problem in expanded form. Step 2: Write the problem as multiplication. $\frac{1\cdot 2\cdot 2\cdot 2\cdot 2}{2\cdot 2\cdot 2}$ Remember to flip the fraction. $5^3 \cdot \frac{1}{5^2}$ Step 3: Cancel common factors. $\frac{1\cdot 2\cdot \cancel{2}\cdot \cancel{2}\cdot \cancel{2}}{\cancel{2}\cdot \cancel{2}\cdot \cancel{2}}$ Step 3: Expand, cancel and simplify. $\frac{5\cdot 5\cdot 5}{5\cdot 5} = \frac{5\cdot 5\cdot 5}{5\cdot 5}$ Step 4: Simplify. $1 \cdot 2 = 2$ = 5 **Structured Guided Practice**

Directions: Use the expanded strategy to multiply or divide. Leave in exponential form.







Directions: Use the expanded strategy to multiply or divide. Leave in exponential form.

1. 2 ⁻⁸ · 2 ⁶	2. $\frac{x}{x^{-3}}$
3. 9 ⁵ · 9 ⁻⁴	4. $\frac{4^{-5}}{4^2}$
5. n ⁻¹⁰ · n ⁵	6. <u>3</u> ⁶ <u>3</u> ⁻¹⁰

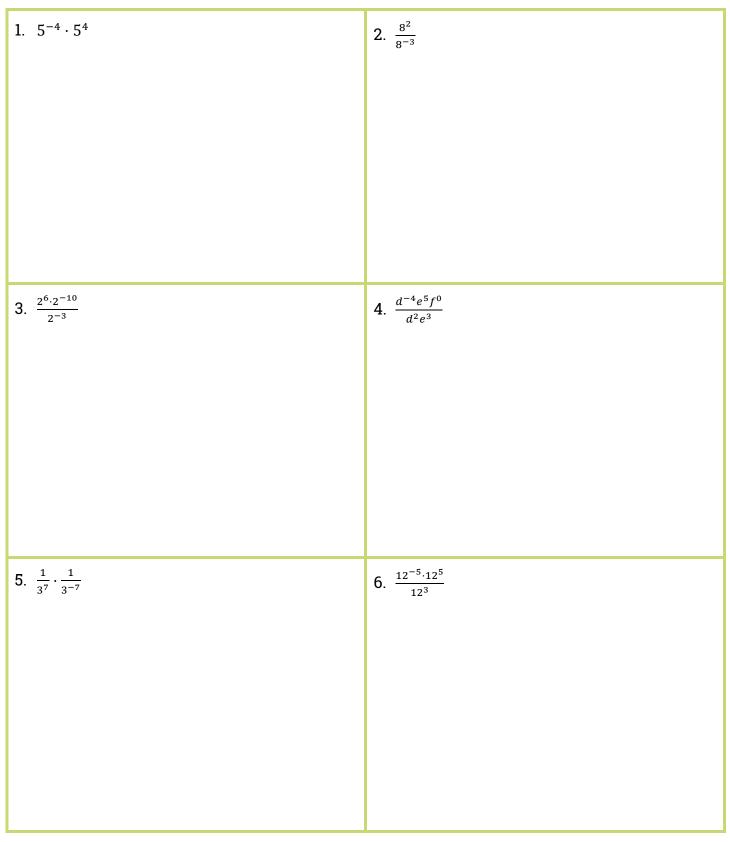


Unit 2 · Lessons 5-7: Zero and Negative Exponents

Name:

Date:

Directions: Simplify the expression. Write the solution using a positive exponent.





Re-Engage Unit 2 Lesson 9-11a: Finding Squares of Integers



Name:

Date:

Model

Model 1 (5) ²	Model 2 (-5) ²
Directions: Find the Square	Directions: Find the Square
Step 1. Rewrite (5) ² as the expanded version of (5) multiplied by itself twice.	Step 1. Rewrite (-5) ² as the expanded version of (-5) multiplied by itself twice.
Step 2. Multiply (5) × (5) = 25	Step 2. Multiply (-5) × (-5) = 25
Notice that the answer will always be positive when taking the square of any integer.	Notice that the answer will always be positive when taking the square of any integer.

Structured Guided Practice

1. (3) ²	2. (4) ²
3(3) ²	4(4) ²





1. 5 ²	2. 6 ²
3. 7 ²	4 5 ²
56 ²	67 ²



Re-Engage Unit 2 Lesson 9-11b: Finding Squares of Rational Numbers



Name:

Date:

Model

Model 1

(√7)²

Directions: Find the Square

Step 1. Rewrite $(\sqrt{7})^2$ as the expanded version of $(\sqrt{7})$ multiplied by itself twice.

Step 2. Multiply $(\sqrt{7}) \times (\sqrt{7}) = \sqrt{49}$ Notice that the number 49 is a perfect square and is equal to 7².

Step 3. Solve $\sqrt{49} = 7$.

Therefore the solution is 7.

Model 2

(√15)²

Directions: Find the Square

Step 1. Rewrite $(\sqrt{15})^2$ as the expanded version of $(\sqrt{15})$ multiplied by itself twice.

Step 2. Multiply $(\sqrt{15}) \times (\sqrt{15}) = \sqrt{225}$

Notice that the number 225 is a perfect square and is equal to 15^2 .

Step 3. Solve $\sqrt{225} = 15$

Therefore the solution is 15.

Structured Guided Practice

1.	$(\sqrt{3})^2$	2. $(\sqrt{4})^2$
3.	$(\sqrt{12})^2$	4 . $(\sqrt{14})^2$



Re-Engage Unit 2 Lesson 9-11b: Finding Squares of Rational Numbers



Student Practice

1. $(\sqrt{9})^2$	2. $(\sqrt{6})^2$
3. $(\sqrt{4})^2$	4 . $(\sqrt{10})^2$
5. $(\sqrt{11})^2$	6. $(\sqrt{13})^2$



Re-Engage Unit 2 Lesson 9-11c: Finding Cubes of Integers



Name:_____

Date:

Model

Model 1	Model 2
(6) ³	-(6) ³
Directions: Find the Cube Step 1. Rewrite (6) ³ as the expanded version of (6) multiplied by itself three times. Step 2. Multiply (6) × (6) × (6) = 216	Directions: Find the Cube Step 1. Rewrite -(6) ³ as -1 times (6) ³ . Step 2. Multiply -(6)(6)(6) = -216
Notice that the answer will always be	Notice that the answer will always be
positive when taking the cube of any	negative when taking the cube of any
positive integer.	negative integer.

Structured Guided Practice

Directions: Find the Cube.

2. (5) ³
4 (5) ³





Directions: Find the Cube.

1 (2) ³	o (7) ³
1. (3) ³	2. (7) ³
3. (1) ³	4(3) ³
5(7) ³	6(1) ³





Directions: Solve. Determine if the solution is rational or irrational.

1. $y^3 = 64$	2. $729 = c^3$
3. $g^2 = 225$	4. $m^3 = 625$
5. $n^2 = 1000$	6. $r^3 = 1$

