Virtual Learning

Essential Math 4

Unit 11

Lesson 5: Area Models

May 18, 2020

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Lesson 5: May 18, 2020

Learning Target:
I can use area models to help write equations.

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You will explore the use of multiplication and its relationship to exponents.

Directions:

1. Click through the slides.
2. Watch all videos on slides.
3. Do what each slide asks on a separate sheet of paper.

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Bell Work: May 18, 2020

Complete these area model puzzles and write either a multiplication or division equation to describe each one.

(A)

	x^2	$2x$
	$5x$	10

( ) ( ) = x^2 + _____ + 10

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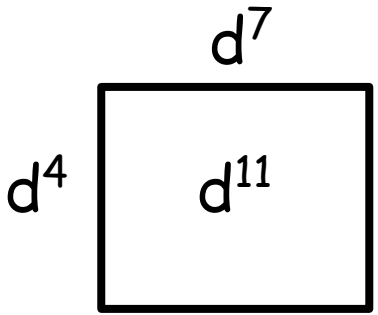
Bell Work Key
May 18, 2020

(A)

	x	2
x	x^2	$2x$
5	$5x$	10

$(x+5)(x+2) = x^2 + 7x + 10$

Unit 11 - Lesson 5 Example



1) $d^4 \cdot d^7 = d^{11}$

2) $\dfrac{d^{11}}{d^4} = d^7$

3) $\dfrac{d^{11}}{d^7} = d^4$

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Practice Problems: Unit 11 Lesson 5 page 20, # 1-3

Use each area model to write *three* equations: one using multiplication and two using division.

①

	n^3
n^2	n^5

②

	c^{-2}
c^8	c^6

③

	$3w$	$5w^{-2}$
w^3	$3w^4$	$5w$

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Answer Key: After completing the problems, check your answers for page 20 here.

Use each area model to write *three* equations: one using multiplication and two using division.

①

	n^3
n^2	n^5

$n^2 \cdot n^3 = n^5$

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

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

②

	c^{-2}
c^8	c^6

$c^8 \cdot c^{-2} = c^6$

$\frac{c^6}{c^8} = c^{-2}$

$\frac{c^6}{c^{-2}} = c^8$

③

	$3w$	$5w^{-2}$
w^3	$3w^4$	$5w$

$w^3(3w + 5w^{-2}) = 3w^4 + 5w$

$\frac{3w^4 + 5w}{w^3} = 3w + 5w^{-2}$

$\frac{3w^4 + 5w}{3w + 5w^{-2}} = w^3$

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Practice Problems: Unit 11 Lesson 5 page 20, # 4-5

Draw an area model and use it to answer the multiplication or division problem.

④ $5p^3(p^6 + 2p^{-1}) =$

⑤ $\frac{18m^8 + 10m^5}{2m^3} =$

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Answer Key: After completing the problems, check your answers for page 20 here.

Draw an area model and use it to answer the multiplication or division problem.

④ $5p^3(p^6 + 2p^{-1}) =$ $5p^9 + 10p^2$

	p^6	$2p^{-1}$
$5p^3$	$5p^9$	$10p^2$

⑤ $\frac{18m^8 + 10m^5}{2m^3} =$ $9m^5 + 5m^2$

	$9m^5$	$5m^2$
$2m^3$	$18m^8$	$10m^5$

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Practice Problems: Unit 11 Lesson 5 page 20, # 6-7

Draw an area model and use it to answer the multiplication or division problem.

⑥ $(4y^3 + y^2)(y^{10} - 7) =$

⑦ $\frac{35x^7 + 55x^3}{5x^2} =$

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Answer Key: After completing the problems, check your answers for page 20 here.

⑥ $(4y^3 + y^2)(y^{10} - 7) =$ $4y^{13} + y^{12} - 28y^3 - 7y^2$

	y^{10}	-7
$4y^3$	$4y^{13}$	$-28y^3$
y^2	y^{12}	$-7y^2$

⑦ $\dfrac{35x^7 + 55x^3}{5x^2} =$ $7x^5 + 11x$

	$7x^5$	$11x$
$5x^2$	$35x^7$	$55x^3$

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Practice Problems: Unit 11 Lesson 5 page 20, # 8-9

Draw an area model and use it to answer the multiplication or division problem.

⑧ $(n^7 + n^3)(8n^2 - n) =$

⑨ $(3w^5 - w^2)(w^2 + 2w) =$

Answer Key: After completing the problems, check your answers for page 20 here.

⑧ $(n^7 + n^3)(8n^2 - n) =$ $8n^9 - n^8 + 8n^5 - n^4$

	$8n^2$	$-n$
n^7	$8n^9$	$-n^8$
n^3	$8n^5$	$-n^4$

⑨ $(3w^5 - w^2)(w^2 + 2w) =$ $3w^7 + 6w^6 - w^4 - 2w^3$

	w^2	$2w$
$3w^5$	$3w^7$	$6w^6$
$-w^2$	$-w^4$	$-2w^3$

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Fun Stuff:

The Merchant

A merchant can place 8 large boxes or 10 small boxes into a carton for shipping. In one shipment, he sent a total of 96 boxes. If there are more large boxes than small boxes, how many cartons did he ship?

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Fun Stuff Answer:

11 cartons total

7 large boxes (7 * 8 = 56 boxes)

4 small boxes (4 10 = 40 boxes

11 total cartons and 96 boxes

https://www.mathwarehouse.com/riddles/math-riddles.php#riddle6

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