



# ***New York State Testing Program***

## **Mathematics Test**

Grade **8**

**2009 Scoring Guide Part 2**

**44**

Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

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**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

**Answer** \_\_\_\_\_

**QUESTION 44**

**STRAND 1: NUMBER SENSE AND OPERATIONS**

*Complete and Correct Response:*

*Part A*

- No, she did not simplify the expression correctly. She multiplied the exponents instead of adding them.

OR other valid response

*Part B*

- $2xy^4$

*Score Points:*

Apply 3-point holistic rubric.

**44** Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

Lenora did not simplify the expression correctly. If she did, it would come out to be  $10x^2y^6$ . This is because you have to add the exponents when multiplying. Lenora did not do that. She multiplied them instead.

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer  $2xy^4$

This response is complete and correct.

**Score Point 3**

**44** Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

No, because  $(2x^{-1}y^4)(5x^3y^2) = 10x^2y^6$

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**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

Answer  $\frac{4x^3y^5}{2x^2y} = 2xy^4$

This response is complete and correct. Part B is correct, and the description in Part A adequately demonstrates a thorough understanding of the laws of exponents.

**Score Point 3**

44

Lenora is practicing simplifying expressions for her mathematics class.

### Part A

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

No Lenora didn't simplify the expression correctly. The correct answer is  $10x^{-4}y^6$ . This is the correct answer because in the exponents I added them instead of multiplying. When multiplying an expression you always add the exponents. Lenora on the other hand multiplied instead of adding.

### Part B

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer  $2xy^4$

$$(2x^{-1}y^4)(5x^3y^2)$$

$$2x^{-1}y^4 \cdot 5x^3y^2 =$$

$$10x^{-4}y^6$$

This response is partially correct. The correct answer is provided in Part B, and the explanation in Part A describes a mathematically sound procedure; however, a calculation error results in an incorrect mathematical statement in Part A.

Score Point 2

**44**

Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

Lenora didn't simplify the expression because she multiplied the exponents when she should have added them.

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer  $8xy^4$

This response is partially correct. The explanation in Part A demonstrates a mathematically sound procedure; however, the answer provided in Part B is incorrect.

**Score Point 2**

44 Lenora is practicing simplifying expressions for her mathematics class.

Part A

$$10x^{-3} / 5x^3 y^4 / 2x^{-1} y^2 / y^8$$

*(Handwritten work showing the original expression and a crossed-out attempt to combine terms:  $(2x^{-1} y^4)(5x^3 y^8)$ )*

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

*(Handwritten work showing incorrect addition of terms:  $10x^{-3} + 5x^3 y^4 + 2x^{-1} y^2 + y^8$ )*

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

*No, the answer is not correct.  
I added each like term and it  
does not equal  $10x^{-3}y^8$ .*

Part B

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer  $2x y^4$

This response demonstrates only a limited understanding of the mathematical concepts embodied in the task. The explanation in Part A is incorrect; however, the answer provided in Part B is correct.

Score Point 1

**44** Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

Lenora did the expression correctly because  $(2x^{-1}y^4)(5x^3y^2)$  is = to  $10x^{-3}y^8$ . First you multiply the  $2x$  to  $5x$  to get  $10x$  and multiply the exponent to  $-1$  and  $3$  to get  $-3$ . And multiply the  $4$  to  $2$  to get  $8$ .

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer  $2xy^4$

This response demonstrates only a limited understanding of the mathematical concepts embodied in the task. The explanation in Part A is incorrect; however, the answer provided in Part B is correct.

**Score Point 1**

**44** Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

Lenora didn't simplify the expression correctly because she didn't put negative signs in the right place.

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer 2x<sup>1</sup>y

This response is incorrect. The explanation provided is incorrect. The correct coefficient and a correct exponential value for one of the two variables in Part B are not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.

**Score Point 0**



# ***New York State Testing Program***

## **Mathematics Test**

Grade **8**

**2009 Practice Test**

44

Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

*no, she didn't add the exponents*

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**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer *2xy<sup>4</sup>*

**44** Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

No, because with  $5x^3y^2$ , the correct answer is  $10x^{-3}y^1$ .

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

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

Answer  $8x^1y^4$

$$8x^1y^4$$

44

Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

No Lenora did not simplify the expression correctly because when you simplify you add you don't multiply. Lenora multiplied therefore the final answer she received is not correct.

$$(2x^{-1}y^4)(5x^3y^2) = 7x^2y^6$$

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer  $2x^1y^4$

**44** Lenora is practicing simplifying expressions for her mathematics class.

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^8$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

NO because there are not supposed to be negative exponents

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

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

Answer  $2x^1y^4$

44 Lenora is practicing simplifying expressions for her mathematics class.

$$(2x^{-1}y^4)(5x^3y^2)$$

**Part A**

Lenora simplified the expression  $(2x^{-1}y^4)(5x^3y^2)$  as shown below.

$$(2x^{-1}y^4)(5x^3y^2) = 10x^{-3}y^6$$

Did Lenora simplify the expression correctly? On the lines below, explain how you determined your answer.

No, Lenora didn't simplify the expression correctly because when you multiply the base then your suppose to add the exponents and lenora multiplied the base and the exponents.

**Part B**

What answer will Lenora get if she correctly simplifies the expression below?

$$\frac{4x^3y^5}{2x^2y} \quad 2$$

Answer  $\frac{2x}{y^4}$

# 8<sup>th</sup> GRADE MATHEMATICS

Name: \_\_\_\_\_

## PRACTICE SET ANSWER KEY

PS 1	(0-2)	1
PS 2	(0-2)	1
PS 3	(0-2)	0
PS 4	(0-2)	1
PS 5	(0-2)	2
PS 6	(0-2)	2
PS 7	(0-2)	0
PS 8	(0-2)	2
PS 9	(0-2)	1
PS 10	(0-2)	2
PS 11	(0-2)	2
PS 12	(0-2)	0
PS 13	(0-2)	1
PS 14	(0-2)	1
PS 15	(0-2)	2
PS 16	(0-2)	2
PS 17	(0-2)	1
PS 18	(0-2)	0
PS 19	(0-2)	2
PS 20	(0-2)	1
PS 21	(0-3)	2
PS 22	(0-3)	3
PS 23	(0-3)	0
PS 24	(0-3)	1
PS 25	(0-3)	2

PS 26	(0-3)	3
PS 27	(0-3)	1
PS 28	(0-3)	0
PS 29	(0-3)	1
PS 30	(0-3)	2
PS 31	(0-2)	1
PS 32	(0-2)	0
PS 33	(0-2)	2
PS 34	(0-2)	2
PS 35	(0-2)	1
PS 36	(0-2)	1
PS 37	(0-2)	2
PS 38	(0-2)	1
PS 39	(0-2)	1
PS 40	(0-2)	2
PS 41	(0-2)	1
PS 42	(0-2)	0
PS 43	(0-2)	2
PS 44	(0-2)	2
PS 45	(0-2)	1
PS 46	(0-2)	0
PS 47	(0-2)	2
PS 48	(0-2)	1
PS 49	(0-2)	2
PS 50	(0-2)	1

