LESSON MAKER PRO

Operation Quest

Fractions, powers, and absolute value in the right order.

GRADE 7 · MA.7.NSO.2.1

MA.7.NSO.2.1 "Solve mathematical problems using multi-step order of operations with rational numbers including grouping symbols, whole-number exponents and absolute value."

NAME _____ DATE _____

CHOOSE THE ORDER

Evaluate expressions inside grouping symbols first. Then evaluate exponents and absolute values, multiply or divide from left to right, and add or subtract from left to right.

WORKED EXAMPLE

$(|-23/17 + 6/17| * 11)^4$

1. $-23/17 + 6/17 = -17/17 = -1$.
2. $|-1| = 1$.
3. $(1 * 11)^4 = 11^4$.
4. $11^4 = 14641$.

Answer: 14641

PRACTICE 6 problems

1 $18 - |-9| + 5$

ANSWER _____

2 $(15/8 - 3/8) * (-10)$

ANSWER _____

3 $-20 + 3^3$

ANSWER _____

4 $|-9/5| + (8/5 * -5)$

ANSWER _____

5 $[(-8)^3 / 64] + 13$

ANSWER _____

6 $(22 - 34) / |-9| + 18$

ANSWER _____

APPLY IT Show your work

1 You have $16 in your music-app account. Each of 20 songs costs $3/5, and a coupon lowers the total cost by 3^2 dollars. How much money is left after you buy the songs?

WORK SPACE

ANSWER _____

2 A student council account begins at -$12.50. A sponsor adds an amount equal to |-12.50|. The council then earns $3/5 for each of 20 wristbands and spends 2^2 dollars on posters. What is the final account balance?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Evaluate. Show a line for each order-of-operations step: { [|-28/5 + 13/5| * 5] - 2^3 } / (-10)

WORK SPACE AND ANSWER

ANSWER KEY

Operation Quest

GRADE 7 · MA.7.NSO.2.1

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	18 - |-9| + 5	**14**
2	(15/8 - 3/8) * (-10)	**-15**
3	$-20 + 3^3$	**7**
4	|-9/5| + (8/5 * -5)	**-31/5**
5	$[(-8)^3 / 64] + 13$	**5**
6	(22 - 34) / |-9| + 18	**50/3**

PART 2 · APPLY IT

1. **$13** Compute 20(3/5) = 12 and $3^2 = 9$, so the songs cost $12 - $9 = $3 after the coupon. Then $16 - $3 = $13.
2. **$8** The sponsor adds $12.50, which brings the account to $0. Wristbands earn $12, posters cost $4, and the final balance is $8.

CHALLENGE

-7/10

Accept equivalent fractions, decimals, or mixed numbers where appropriate. For example, accept 16 2/3 for 50/3 and -6 1/5 for -31/5.