LESSON MAKER PRO

Expression Switch

Change the form, keep the value.

GRADE 6 · 6.A.2

6.A.2 "Use properties of arithmetic to generate equivalent numerical expressions and evaluate expressions involving positive rational numbers..."

NAME _____ DATE _____

THE BIG IDEA

You can change the order or grouping of numbers you add or multiply without changing the value. You can also multiply each addend inside parentheses, then add the products. Follow the order of operations when you evaluate.

WORKED EXAMPLE

Rewrite 7/11(22 + 33) using the distributive property, then evaluate.

1. 7/11(22 + 33) = 7/11 * 22 + 7/11 * 33
2. 7/11 * 22 + 7/11 * 33 = 14 + 21
3. 14 + 21 = 35

Answer: 7/11 * 22 + 7/11 * 33 = 35

PRACTICE 6 problems

1 Rewrite 4(2 + 3) using the distributive property, then find its value.

ANSWER _____

2 Rewrite 1/2(8 + 4) using the distributive property, then find its value.

ANSWER _____

3 Rewrite 1.5(4 + 2) using the distributive property, then find its value.

ANSWER _____

4 Regroup (1/4 * 8) * 2 using the associative property, then find its value.

ANSWER _____

5 Reorder the factors in 0.2 * 4 * 5 so that 0.2 and 5 are next to each other. Then find the value.

ANSWER _____

6 Evaluate 2 + 1/4(8 + 4). Show the value inside the parentheses first.

ANSWER _____

APPLY IT Show your work

1 At a club game night, 4 students each buy a $1.25 drink and a $2.75 snack. Write two equivalent expressions for the total cost. How much do they spend?

WORK SPACE

ANSWER _____

2 For a movie night, 8 friends each get 1/2 bag of popcorn and 1/4 bag of pretzels. Write two equivalent expressions for the total number of bags. How many bags do they get in all?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Write two expressions equivalent to 1/4(16 + 8) + 1/2(16 + 8): one by grouping the fractions together and one by distributing. Then find the value.

WORK SPACE AND ANSWER

ANSWER KEY

Expression Switch

GRADE 6 · 6.A.2

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Rewrite 4(2 + 3) using the distributive property, then find its value.	**4 * 2 + 4 * 3 = 20**
2	Rewrite 1/2(8 + 4) using the distributive property, then find its value.	**1/2 * 8 + 1/2 * 4 = 6**
3	Rewrite 1.5(4 + 2) using the distributive property, then find its value.	**1.5 * 4 + 1.5 * 2 = 9**
4	Regroup (1/4 * 8) * 2 using the associative property, then find its value.	**1/4 * (8 * 2) = 4**
5	Reorder the factors in 0.2 * 4 * 5 so that 0.2 and 5 are next to each other. Then find the value.	**0.2 * 5 * 4 = 4**
6	Evaluate 2 + 1/4(8 + 4). Show the value inside the parentheses first.	**2 + 1/4 * 12 = 5**

PART 2 · APPLY IT

1. **4(1.25 + 2.75) = 4 * 1.25 + 4 * 2.75 = $16.00** Distribute the 4 to both prices. The drinks cost $5.00 and the snacks cost $11.00, for a total of $16.00.
2. **8(1/2 + 1/4) = 8 * 1/2 + 8 * 1/4 = 6 bags** Distribute the 8 to both fractions. They get 4 bags of popcorn and 2 bags of pretzels.

CHALLENGE

Grouped: (1/4 + 1/2)(16 + 8). Distributed: 1/4 * 16 + 1/4 * 8 + 1/2 * 16 + 1/2 * 8. Both equal 18.

Accept equivalent expressions with different spacing or factor order. For the challenge, the grouped and distributed expressions must both have a value of 18.