

Equals or Not?

Sort math statements by what they tell you.

6.7 "Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations..."

NAME _____

DATE _____

EXPRESSION

An expression shows a value using numbers, variables, and operations. It does not state that two amounts are equal.

$$11 + 2z$$

EQUATION

An equation states that two amounts are equal. It uses an equal sign or the word *is*.

$$8q - 1 = 23$$

1 SORT _____ 8 items

Circle the category for each item, then choose two items and explain what shows each one is an expression or an equation.

1. $18 \div 3 + 5$

EXPRESSION

EQUATION

2. the product of 4 and n

EXPRESSION

EQUATION

3. $4m + 9 = 25$

EXPRESSION

EQUATION

4. $2^3 \cdot 5$

EXPRESSION

EQUATION

5. seven more than y is 19

EXPRESSION

EQUATION

6. $14 + k = k + 14$

EXPRESSION

EQUATION

7. $9 - 4$

EXPRESSION

EQUATION

8. $6(a + 2) = 6a + 12$

EXPRESSION

EQUATION

2

PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ HOW I KNEW _____

ITEM # _____ HOW I KNEW _____

3

MAKE YOUR OWN

One of each

Write one new expression and one new equation.

EXPRESSION _____

EQUATION _____

CHALLENGE

Write two different equivalent expressions. Then let $n = 3$ and show that both expressions have the same value.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	$18 \div 3 + 5$	EXPRESSION	It has operations but no equal sign or equality statement.
2	the product of 4 and n	EXPRESSION	It names a value but does not say two amounts are equal.
3	$4m + 9 = 25$	EQUATION	It uses an equal sign to state that two amounts are equal.
4	$2^3 \cdot 5$	EXPRESSION	It is a numerical expression with an exponent and multiplication.
5	seven more than y is 19	EQUATION	The word is states that two amounts are equal.
6	$14 + k = k + 14$	EQUATION	It uses an equal sign to compare two expressions.
7	$9 - 4$	EXPRESSION	It shows a calculation but does not state equality.
8	$6(a + 2) = 6a + 12$	EQUATION	It uses an equal sign to state that two expressions have the same value.

PART 2 • PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 • MAKE YOUR OWN (SAMPLE ANSWERS)

- **EXPRESSION:** $12r - 7$
- **EQUATION:** $5x + 2 = 17$

Challenge: $2(n + 4)$ and $2n + 8$. When $n = 3$, $2(3 + 4) = 14$ and $2(3) + 8 = 14$.

Sort key: 1 EXPRESSION, 2 EXPRESSION, 3 EQUATION, 4 EXPRESSION, 5 EQUATION, 6 EQUATION, 7 EXPRESSION, 8 EQUATION. In Part 2, students should identify the absence of an equality statement for an expression or the equal sign or word is for an equation.