

Luna's Space Adventure

Name _____

Grade 5 · True or false equations · MA.5.AR.2.3

Date _____



Astronaut Luna is exploring a far-off corner of space. Solve each problem to help Luna's mission go smoothly!

True or false? The = sign means both sides are worth the same.

$245 \div 5 = 84 - 35$	True	False	$8 + 3 \times 5 = 23$	True	False
$66 + 28 = 72 + 6 \times 4$	True	False	$4 + 3 \times 6 = 42$	True	False
$5 + 5 \times 4 = 40$	True	False	$5 \times 7 = 23 + 13$	True	False
$33 - 14 = 16 + 3$	True	False	$9 + 4 \times 6 = 33$	True	False
$21 + 39 = 70 - 8$	True	False	$7 + 6 = 104 \div 8$	True	False

Say why Work out each side. Same value? Then it's true.

$43 + 31 = 4 \times 19$	left side		right side		True	False
$6 + 2 \times 6 = 48$	left side		right side		True	False
$56 - 14 = 378 \div 9$	left side		right side		True	False
$59 + 2 = 67 - 6$	left side		right side		True	False
$54 + 9 \times 3 = 87 - 6$	left side		right side		True	False

Fix it Each one is false. Change one number to make it true.

$0.2 + 2.5 = 4.5 - 2$	_____	$2.7 \div 9 = 0.3 + 0.1$	_____
$2.4 \div 4 = 0.1 \times 7$	_____	$0.8 + 1.6 = 12.5 \div 5$	_____

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ANSWER KEY



Astronaut Luna is exploring a far-off corner of space. Solve each problem to help Luna's mission go smoothly!

True or false? The = sign means both sides are worth the same.

$245 \div 5 = 84 - 35$

True False

$8 + 3 \times 5 = 23$

True False

$66 + 28 = 72 + 6 \times 4$

True False

$4 + 3 \times 6 = 42$

True False

$5 + 5 \times 4 = 40$

True False

$5 \times 7 = 23 + 13$

True False

$33 - 14 = 16 + 3$

True False

$9 + 4 \times 6 = 33$

True False

$21 + 39 = 70 - 8$

True False

$7 + 6 = 104 \div 8$

True False

Say why Work out each side. Same value? Then it's true.

$43 + 31 = 4 \times 19$

left side 74 right side 76

True False

$6 + 2 \times 6 = 48$

left side 18 right side 48

True False

$56 - 14 = 378 \div 9$

left side 42 right side 42

True False

$59 + 2 = 67 - 6$

left side 61 right side 61

True False

$54 + 9 \times 3 = 87 - 6$

left side 81 right side 81

True False

Fix it Each one is false. Change one number to make it true.

$0.2 + 2.5 = 4.5 - 2$

$0 + 2.5 = 4.5 - 2$

$2.7 \div 9 = 0.3 + 0.1$

$2.7 \div 9 = 0.3 + 0$

$2.4 \div 4 = 0.1 \times 7$

$2.4 \div 4 = 0.1 \times 6$

$0.8 + 1.6 = 12.5 \div 5$

$0.8 + 1.6 = 12 \div 5$

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GUIDE

① What this sheet practises

Deciding whether an equation is true or false by working out both sides, with any of +, −, × and ÷, and fixing false ones by changing one number.

② A problem from the sheet, worked out

Say why Work out each side. Same value? Then it's true.

$43 + 31 = 4 \times 19$	left side	74	right side	76	True	False
$6 + 2 \times 6 = 48$	left side	18	right side	48	True	False
$56 - 14 = 378 \div 9$	left side	42	right side	42	True	False
$59 + 2 = 67 - 6$	left side	61	right side	61	True	False

How: Work out each side on its own, doing × and ÷ before + and −. The same value on both sides means true. To fix a false one, change one number so the sides match.

③ Words to know

equation two expressions joined by =

equal sign both sides are worth the same

true both sides have the same value

order of operations × and ÷ before + and −

④ Watch for

- Working $19 + 8 \times 2$ from left to right to get 54 instead of 35.
- Treating = as “the answer comes next” and checking only one side.
- Fixing a false equation by changing more than one number.

⑤ Where it fits

BEFORE

5.OA.A.1

Evaluate expressions with parentheses and brackets.

THIS SHEET

MA.5.AR.2.3

Decide whether equations with any operation are true or false, and explain why.

⑥ Helping at home

Write one true and one false equation, like $6 \times 4 = 30 - 6$ and $6 \times 4 = 30 - 5$, and let your child find the false one.