

Luna's Space Adventure

Name _____

Grade 3 · True or false: $\times$ and $\div$ · MA.3.AR.2.2

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.

$3 \times 3 = 9$	True	False	$4 \times 4 = 16$	True	False
$8 = 4 \times 2$	True	False	$5 \times 5 = 5 \times 6$	True	False
$12 \div 3 = 5$	True	False	$5 \times 4 = 4 \times 6$	True	False
$3 \times 4 = 12$	True	False	$20 \div 5 = 3$	True	False

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

$9 \times 6 = 54$	left side	right side	True	False
$8 \times 4 = 4 \times 9$	left side	right side	True	False
$6 \times 3 = 2 \times 9$	left side	right side	True	False
$54 \div 9 = 6$	left side	right side	True	False
$20 \div 4 = 6$	left side	right side	True	False
$7 \times 3 = 20$	left side	right side	True	False

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

$63 \div 7 = 30 \div 3$	_____	$36 \div 4 = 60 \div 6$	_____
$42 \div 7 = 3 \times 3$	_____	$90 \div 9 = 66 \div 6$	_____
$5 \times 12 = 6 \times 9$	_____	$24 \div 4 = 3 \times 3$	_____

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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.

$3 \times 3 = 9$

True

False

$4 \times 4 = 16$

True

False

$8 = 4 \times 2$

True

False

$5 \times 5 = 5 \times 6$

True

False

$12 \div 3 = 5$

True

False

$5 \times 4 = 4 \times 6$

True

False

$3 \times 4 = 12$

True

False

$20 \div 5 = 3$

True

False

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

$9 \times 6 = 54$

left side

54

right side

54

True

False

$8 \times 4 = 4 \times 9$

left side

32

right side

36

True

False

$6 \times 3 = 2 \times 9$

left side

18

right side

18

True

False

$54 \div 9 = 6$

left side

6

right side

6

True

False

$20 \div 4 = 6$

left side

5

right side

6

True

False

$7 \times 3 = 20$

left side

21

right side

20

True

False

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

$63 \div 7 = 30 \div 3$

$63 \div 7 = 27 \div 3$

$36 \div 4 = 60 \div 6$

$36 \div 4 = 54 \div 6$

$42 \div 7 = 3 \times 3$

$42 \div 7 = 3 \times 2$

$90 \div 9 = 66 \div 6$

$90 \div 9 = 60 \div 6$

$5 \times 12 = 6 \times 9$

$5 \times 12 = 6 \times 10$

$24 \div 4 = 3 \times 3$

$24 \div 4 = 3 \times 2$

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GUIDE

1 What this sheet practises

Deciding if an equation with $\times$ or $\div$ is true or false. The $=$ sign means both sides are worth the same, so $6 \times 8 = 4 \times 12$ is true. Your child works out each side to say why.

2 A problem from the sheet, worked out

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

$$9 \times 6 = 54$$

left side

54

right side

54

True

False

$$8 \times 4 = 4 \times 9$$

left side

32

right side

36

True

False

$$6 \times 3 = 2 \times 9$$

left side

18

right side

18

True

False

$$54 \div 9 = 6$$

left side

6

right side

6

True

False

How: Work out each side on its own, then compare. Same value: true. Different values: false. To fix a false one, change one number so both sides match.

3 Words to know

equation a number sentence with an equals sign

equal sign both sides have the same value

true both sides are worth the same

false the two sides are worth different amounts

4 Watch for

- Calling $48 = 6 \times 8$ false because the answer is on the left.
- Working out one side, like $6 \times 8 = 48$, and never checking 4×12 .
- Mixing up the rules: $7 \div 7$ is 1, not 0, and 7×0 is 0, not 7.

5 Where it fits

BEFORE

1.OA.D.7

Understand the equal sign and decide whether equations are true or false.

THIS SHEET

MA.3.AR.2.2

Decide whether multiplying or dividing equations are true or false, and say why.

6 Helping at home

Say a quick equation like $3 \times 4 = 2 \times 6$ and ask true or false. Then let your child make some up for you, with a false one hidden in.