

Luna's Space Adventure

Name _____

Grade 5 · Letters for unknowns · 5.PFA.2

Date _____



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

Words to expressions

Circle the expression that matches.

12 more than a number $12 \times y$ $y + 12$ $y - 12$ 2 times a number $2 + m$ $2 \times m$ $m \div 2$

a number divided by 8 $t \div 8$ $8 \div t$ $t - 8$ a number plus 10 $t \times 10$ $t + 10$ $10 - t$

Find the letter

What number makes each equation true?

$8 \times k = 48; k = \boxed{}$

$5 \times n = 35; n = \boxed{}$

$41 + p = 112; p = \boxed{}$

$x + 27 = 111; x = \boxed{}$

$p - 21 = 41; p = \boxed{}$

$x - 9 = 22; x = \boxed{}$

$43 + x = 53; x = \boxed{}$

$t \div 4 = 4; t = \boxed{}$

Words to equations

Circle the equation that says the same thing.

A number minus 5 is 24. $y + 5 = 24$ $y - 5 = 24$ $y \div 5 = 24$

8 times a number is 72. $8 \div y = 72$ $8 \times y = 72$ $y + 8 = 72$

9 more than a number is 20. $9 \div y = 20$ $y + 9 = 20$ $y \div 9 = 20$

Write it, then solve it

Use n for the unknown. Write an equation, then find n.

Gia shares some cards equally among 3 friends. Each gets 12. _____

Hugo had some stickers, got 4 more, and now has 44. _____



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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!

Words to expressions Circle the expression that matches.

12 more than a number $12 \times y$ $y + 12$ $y - 12$ 2 times a number $2 + m$ $2 \times m$ $m \div 2$

a number divided by 8 $t \div 8$ $8 \div t$ $t - 8$ a number plus 10 $t \times 10$ $t + 10$ $10 - t$

Find the letter What number makes each equation true?

$$8 \times k = 48; k = 6$$

$$5 \times n = 35; n = 7$$

$$41 + p = 112; p = 71$$

$$x + 27 = 111; x = 84$$

$$p - 21 = 41; p = 62$$

$$x - 9 = 22; x = 31$$

$$43 + x = 53; x = 10$$

$$t \div 4 = 4; t = 16$$

Words to equations Circle the equation that says the same thing.

A number minus 5 is 24.

$$y + 5 = 24 \quad y - 5 = 24 \quad y \div 5 = 24$$

8 times a number is 72.

$$8 \div y = 72 \quad 8 \times y = 72 \quad y + 8 = 72$$

9 more than a number is 20.

$$9 \div y = 20 \quad y + 9 = 20 \quad y \div 9 = 20$$

Write it, then solve it Use n for the unknown. Write an equation, then find n .

Gia shares some cards equally among 3 friends. Each gets 12. $n \div 3 = 12, n = 36$

Hugo had some stickers, got 4 more, and now has 44. $n + 4 = 44, n = 40$



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GUIDE

① What this sheet practises

Using a letter for an unknown number: solving one-step equations, turning words into an equation, and writing and solving equations for stories.

② A problem from the sheet, worked out

Find the letter What number makes each equation true?

$$8 \times k = 48; k = \boxed{6}$$

$$5 \times n = 35; n = \boxed{7}$$

$$41 + p = 112; p = \boxed{71}$$

$$x + 27 = 111; x = \boxed{84}$$

$$p - 21 = 41; p = \boxed{62}$$

$$x - 9 = 22; x = \boxed{31}$$

How: A letter is a number you don't know yet. Undo what was done to it: for $n + 27 = 63$, take 27 from 63, so $n = 36$. Put it back in to check.

③ Words to know

variable a letter that stands for a number

equation two sides that are equal, joined by =

expression numbers, letters and signs with no =

solve find the number that makes it true

④ Watch for

- Writing $7 - n$ for 7 less than a number (it's $n - 7$).
- Adding when the equation needs undoing: $n - 12 = 30$ gives $n = 18$.
- Not checking the answer in the equation.

⑤ Where it fits

BEFORE

3.OA.A.4

Find the missing number in a multiplication or division equation.

THIS SHEET

5.PFA.2

Use a letter or box for an unknown, and write one-step equations and expressions from words.

NEXT

5.OA.A.2

Write and read simple expressions without working them out.

⑥ Helping at home

Play 'I'm thinking of a number': 'I add 9 and get 25.' Write it as $n + 9 = 25$ together, then solve.

