

Equation Quest

Find the missing value in decimal and fraction equations.

GRADE 6 • MA.6.AR.2.4

MA.6.AR.2.4 "Determine the unknown decimal or fraction in an equation involving any of the four operations, relating three numbers, with the unknown in any position."

NAME _____

DATE _____

KEEP IT BALANCED

An equation is balanced, so do the same operation to both sides. Use an inverse operation to get x alone: subtract for addition, add for subtraction, divide for multiplication, and multiply for division. Check by putting your answer back into the equation.

WORKED EXAMPLE

Solve: $2.4 * x = 12$

1. Divide both sides by 2.4.

2. $x = 12 / 2.4$

3. $x = 5$

Answer: $x = 5$

PRACTICE 6 problems

1 Solve: $x + 3/8 = 7/8$

ANSWER _____

2 Solve: $9.6 - x = 4.1$

ANSWER _____

3 Solve: $x - 1.25 = 2.6$

ANSWER _____

4 Solve: $(3/5) * x = 9/10$

ANSWER _____

5 Solve: $x / 0.4 = 7.5$

ANSWER _____

6 Solve: $8.4 / x = 2.1$

ANSWER _____

APPLY IT Show your work

- 1** You have x dollars in your game account. After adding \$2.35, your balance is \$6.75. How many dollars were in the account at first?

WORK SPACE

ANSWER _____

- 2** A 21.6-kilometer biking route is split into x equal stages. Each stage is 2.7 kilometers long. How many stages are there?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Solve: $(7/9) / x = 14/27$

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Solve: $x + \frac{3}{8} = \frac{7}{8}$	$x = \frac{1}{2}$
2	Solve: $9.6 - x = 4.1$	$x = 5.5$
3	Solve: $x - 1.25 = 2.6$	$x = 3.85$
4	Solve: $(\frac{3}{5}) * x = \frac{9}{10}$	$x = \frac{3}{2}$
5	Solve: $x / 0.4 = 7.5$	$x = 3$
6	Solve: $8.4 / x = 2.1$	$x = 4$

PART 2 • APPLY IT

1. **$x = 4.40$ dollars** Write $x + 2.35 = 6.75$. Subtract 2.35 from both sides to get $x = 4.40$.
2. **$x = 8$ stages** Write $21.6 / x = 2.7$. Divide 21.6 by 2.7 to get $x = 8$.

CHALLENGE

$x = \frac{3}{2}$

Accept equivalent fraction and decimal forms when they are exact, such as $\frac{1}{2}$ or 0.5 and $\frac{3}{2}$ or 1.5. For the money problem, accept \$4.40 or \$4.4.