

Equation Story Maps

Use equations and number lines to show relationships.

GRADE 8 • TEKS 8.1.E

8.1.E "create and use representations to organize, record, and communicate mathematical ideas;"

NAME _____

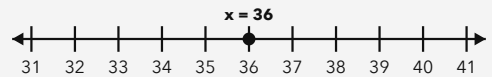
DATE _____

SHOW THE RELATIONSHIP

An equation records a relationship between quantities. Undo operations to isolate x , then write $x = \text{value}$. A number line can show where the solution belongs.

WORKED EXAMPLE

Solve $8x + 11 = 299$. Show the solution on the number line.



1. Subtract 11: $8x = 288$.
2. Divide by 8: $x = 36$.
3. Plot 36 on the number line.

Answer: $x = 36$

PRACTICE 4 problems

1 Solve and record the solution: $6x - 4 = 26$

ANSWER _____

2 Solve and record the solution: $9(x - 1) = 54$

ANSWER _____

3 Solve and record the solution: $x/2 + 3 = 10$

ANSWER _____

4 Solve and record the solution: $4x + 6 = 2x + 24$

ANSWER _____

APPLY IT Show your work

- 1** A club begins with a \$1 donation and earns \$4 per bracelet sold. Use the table to write an equation for money y after x bracelets. Then find y when $x = 6$.

BRACELET FUNDRAISER

Bracelets, x	Money, y
1	\$5
2	\$9
3	\$13

ANSWER _____

- 2** A student has 20 songs in a playlist and adds 6 songs each week. Write an equation for y songs after x weeks. When will the playlist have 56 songs?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Club A has 17 members and gains 2 members each month. Club B has 5 members and gains 4 members each month. Write an equation for each club. After how many months will they have the same number of members? Explain what each starting number means.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Solve and record the solution: $6x - 4 = 26$	$x = 5$
2	Solve and record the solution: $9(x - 1) = 54$	$x = 7$
3	Solve and record the solution: $x/2 + 3 = 10$	$x = 14$
4	Solve and record the solution: $4x + 6 = 2x + 24$	$x = 9$

PART 2 • APPLY IT

- $y = 4x + 1$; $y = \$25$** The money increases by \$4 for each bracelet and starts at \$1. Substitute 6 for x .
- $y = 6x + 20$; 6 weeks** Use 20 as the starting amount and 6 as the weekly change. Solve $6x + 20 = 56$.

CHALLENGE

Club A: $y = 2x + 17$. Club B: $y = 4x + 5$. They are equal after 6 months, with 29 members. The numbers 17 and 5 show the clubs' starting memberships.

Accept equivalent equation forms, such as $y = 1 + 4x$. For the challenge, accept a correct statement that 17 and 5 are the initial member counts.