

# Working Backwards Word Problems

## Maths Strategy

Start with the final number in the question. Work backwards, undoing each step until you get back to the start. Check your answer by putting it back to the question!

## Helpful Tip

Use inverse operations to undo the steps.

Addition and subtraction are inverse operations

Doubling and halving are inverse operations.

1. I have some stickers. I lose 2, but then my friend gives me 5 more. If I now have 12 stickers, how many did I start with?
2. I think of a number. I double it and then I add seven. My answer is nineteen. What number was I thinking of to start with?
3. I go shopping and spend £8.00 on a new football. I then buy two magazines that cost £2.50 each. I have £4.00 left. How much money did I go shopping with?
4. I think of a number. I add ten then half it. My answer is nine. What number was I thinking of to start with?
5. At the beginning of the week I have some pocket money. Then, each week day I earn £3.00 for doing some washing up. On Saturday I spend £5.00 on lollies. If I have £20.00 left, how much money did I have in the beginning of the week?
6. I think of a number. I subtract 6 and then double it. Then, I add 15. My answer is 29. What number was I thinking of to start with?

## Answers

1.9

2.6

3.£17

4.8

5.£10

6.13

## Problem Solving Activity



$$\begin{array}{r} \text{C A T} \\ + \text{D O G} \\ \hline \text{R O W} \end{array}$$



Each letter represents a digit (0-9)

The letter O is zero.

Find out which digit each letter represents.

Make a list of letters so you can match digits to them.

### Helpful Hint!

Think about whether T and G must add to more or less than 10.

Think about whether C and D must add to more or less than 10.


When you have found a solution – check it works!

Use this solution to find a different one where both T and G are two different digits, so they have not just swapped!

### Helpful Hint!

A is always the same digit in ever solution.

## Mini Quiz!

1.  $275 +$    $= 305$

2. I think of a number, I add 72 and subtract 9. My answer is 98. What was my starting number?



3. I think of a number, I add 543. My answer is 958. What was my starting number?



4. I think of a number. I subtract 187 and then add 45. My answer is 78. What was my starting number?



5. I think of a number. I add 244. My answer is 813. What was my starting number?



For the next 5 questions, calculate the answers and then check your answers by using the inverse operations.

$\begin{array}{r} 126 \\ - 113 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} + \\ \hline \\ \hline \end{array}$
---	--

$\begin{array}{r} 358 \\ - 346 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} + \\ \hline \\ \hline \end{array}$
---	--

$\begin{array}{r} 121 \\ + 124 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} - \\ \hline \\ \hline \end{array}$
---	--

$\begin{array}{r} 334 \\ - 124 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} + \\ \hline \\ \hline \end{array}$
---	--

$\begin{array}{r} 237 \\ - 124 \\ \hline \\ \hline \end{array}$	$\begin{array}{r} + \\ \hline \\ \hline \end{array}$
---	--