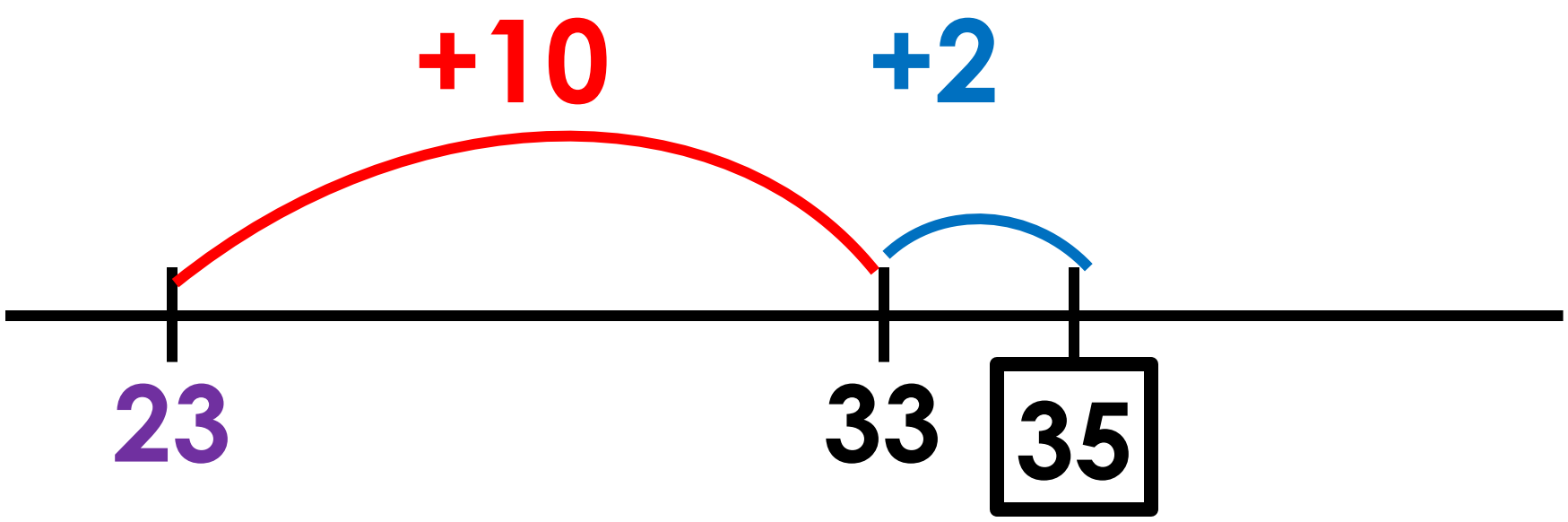
Addition Strategies

Addition Strategy

Add Up In Chunks

Keep the first number whole, add the second number in friendly chunks

23 + 12

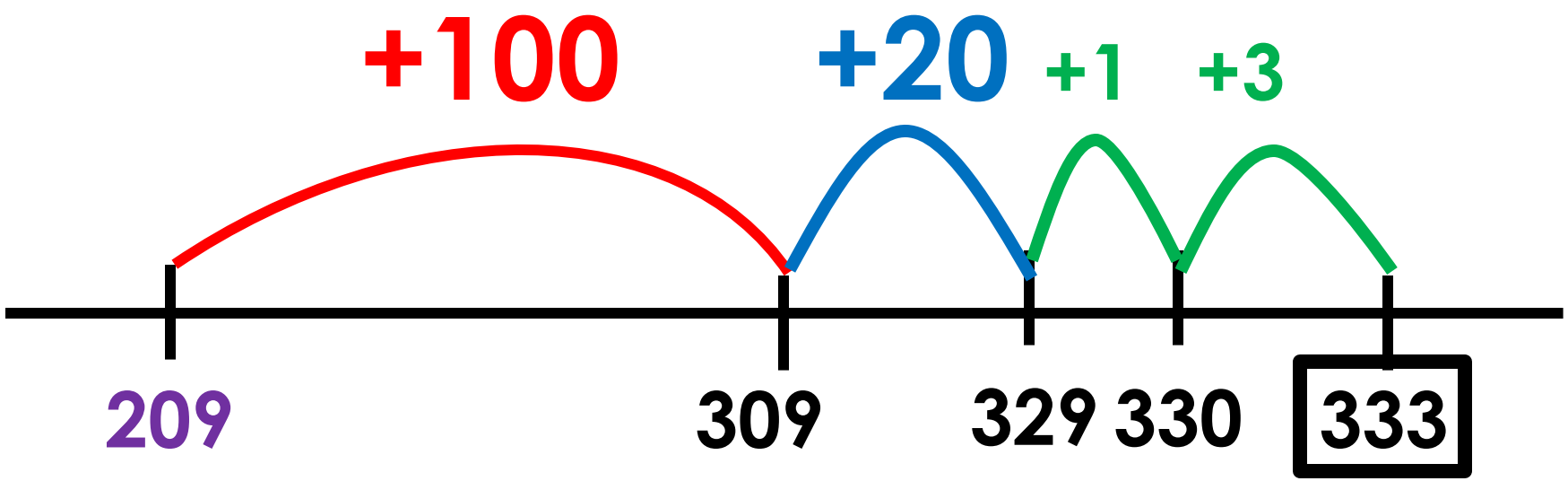


Addition Strategy

Add Up In Chunks

Keep the first number whole, add the second number in friendly chunks

209 + 124



Addition Strategy

Place Value

Partition the numbers and add by the place value

$$21 + 14$$

$$20 + 10 = 30$$

$$1 + 4 = 5$$

$$30 + 5 = \boxed{35}$$

Addition Strategy

Place Value

Partition the numbers and add by the place value

$$124 + 235$$

$$100 + 200 = 300$$

$$20 + 30 = 50$$

$$4 + 5 = 9$$

$$300 + 50 + 9 = \boxed{359}$$

Addition Strategy

Compensation

Make friendly numbers by removing from one number and adding the same amount to the other number

$$17 + 19$$

$$-1 \quad +1$$

$$16 + 20 = \boxed{36}$$

Addition Strategy

Compensation

Make friendly numbers by removing from one number and adding the same amount to the other number

$$135 + 118$$

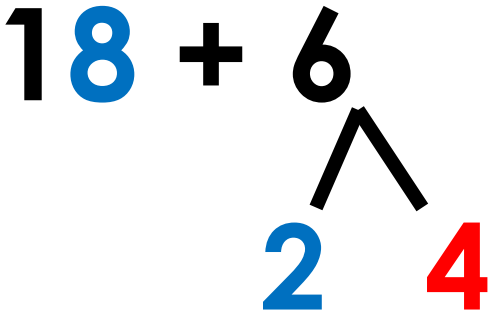
$$\underline{-2} \qquad \underline{+2}$$

$$133 + 120 = \boxed{253}$$

Addition Strategy

Making a Ten/Bridging Through Ten

Make a ten by partitioning a number



$$10 + (8 + 2) = 20$$

$$20 + 4 = \boxed{24}$$

Addition Strategy

Making a Ten/Bridging Through Ten

Make a ten by partitioning a number

$$137 + 118$$

$$130 + 110 + (7 + 3) + 5$$

$$240 + (7 + 3) + 5$$

$$250 + 5 = \boxed{255}$$

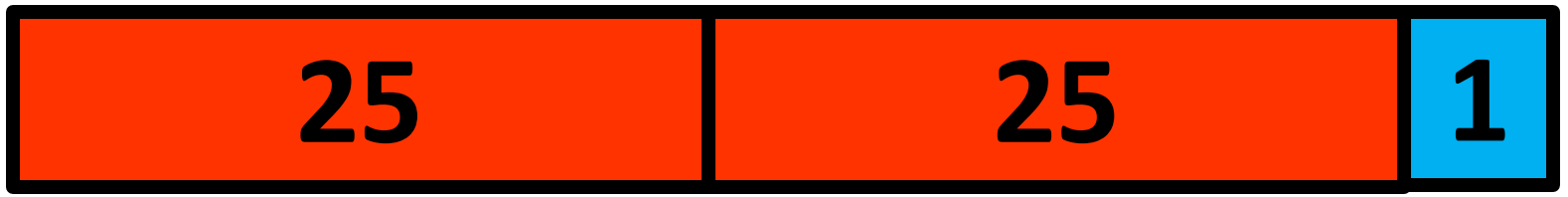
Addition Strategy

Near Doubles

Knowing Doubles helps with Near Doubles

$$25 + 26$$

$$25 + 26 = 25 + (25 + 1)$$



$$50 + 1 = \boxed{51}$$

Addition Strategy

Near Doubles

Knowing Doubles helps with Near Doubles

$$340 + 330$$

$$340 + 330 = 340 + (340 - 10)$$

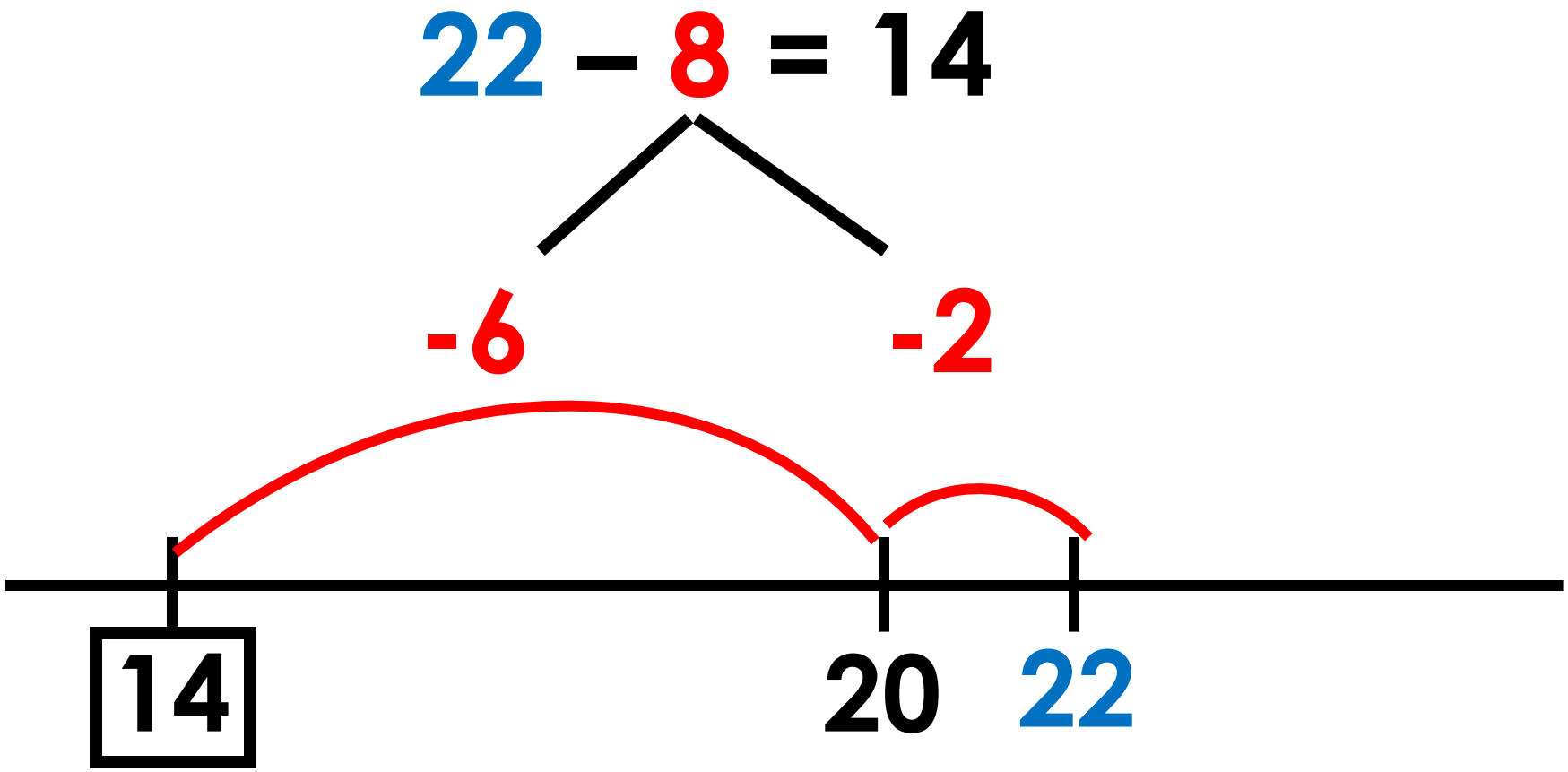
$$680 - 10 = \boxed{670}$$

Subtraction Strategies

Subtraction Strategy

Removal

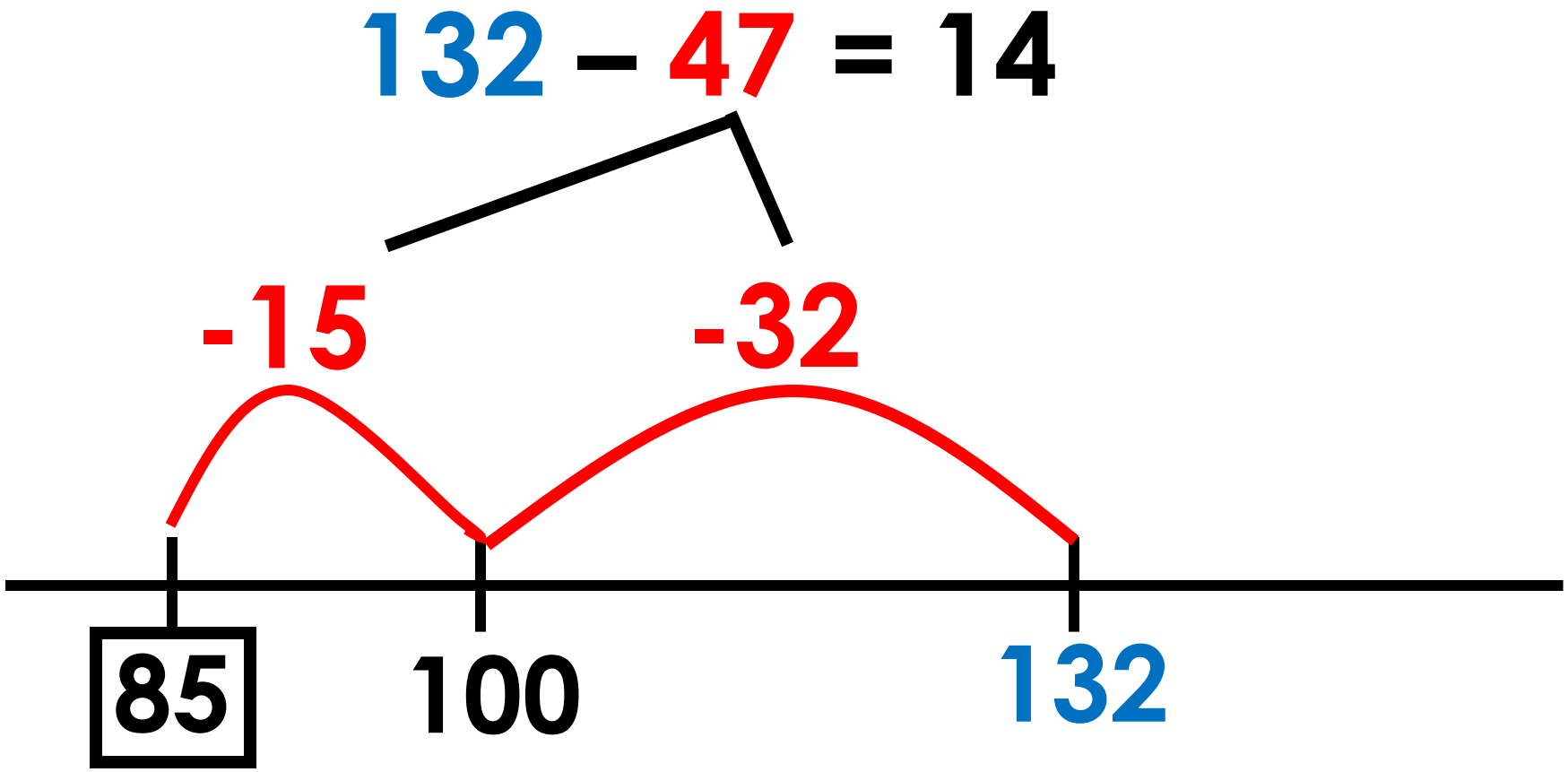
Partition to remove the number within the subtraction.



Subtraction Strategy

Removal

Partition to remove the number within the subtraction.

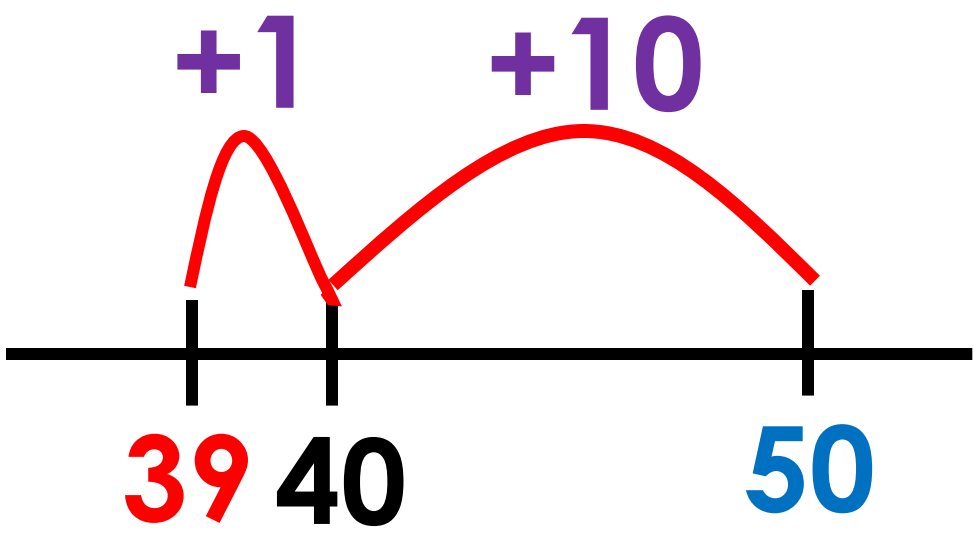


Subtraction Strategy

Add Up

Partition to add from the lowest number to the highest number

50 – 39



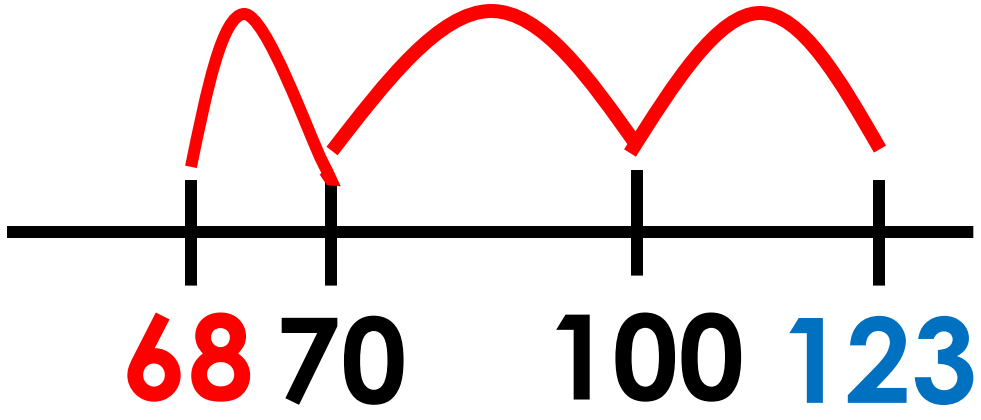
1 + 10 = 11

Subtraction Strategy

Add Up

Partition to add from the lowest number to the highest number

123 – 68



2 + 30 + 23 = **55**

Subtraction Strategy

Place Value Subtraction and Negative Numbers

Partition and subtract using place value

$$75 - 38$$

$$70 - 30 = 40$$

$$5 - 8 = -3$$

$$40 - 3 = \boxed{37}$$

Subtraction Strategy

Place Value Subtraction and Negative Numbers

Partition and subtract using place value

$$243 - 169$$

$$200 - 100 = 100$$

$$40 - 60 = -20$$

$$3 - 9 = -6$$

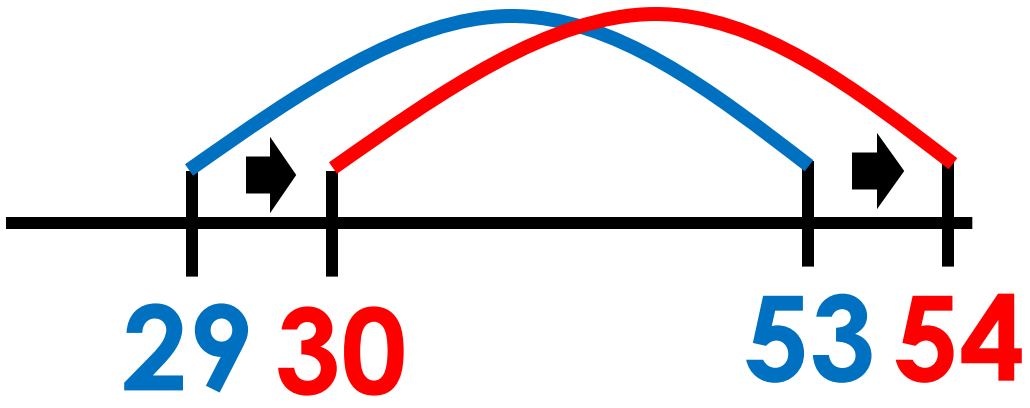
$$100 - 20 - 6 = \boxed{74}$$

Subtraction Strategy

Keeping a Constant Difference

Adjust both numbers in the same way to create a friendly number to keep the difference constant.

$$53 - 29 = 54 - 30 = \boxed{24}$$



Subtraction Strategy

Adjust One Number to Create an Easier Problem

Adjust one number to make a friendly number

$$43 - 29$$

$$+1$$

$$43 - 30 = 13$$

$$13 + 1 = \boxed{14}$$

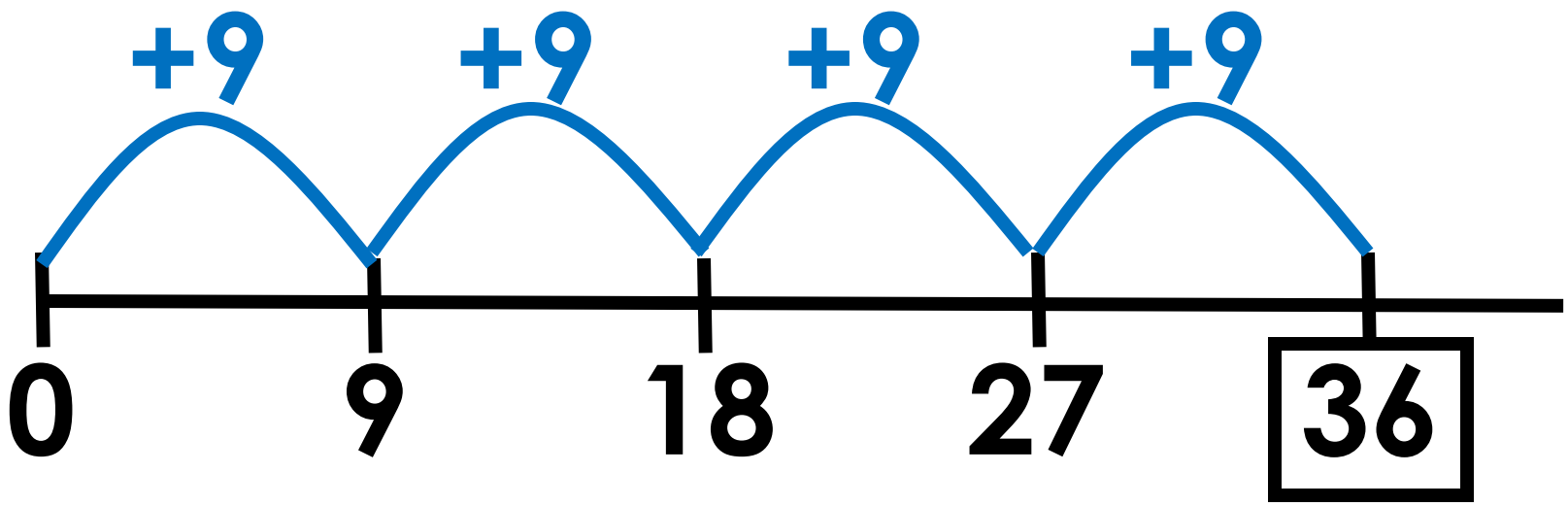
Multiplication Strategies

Multiplication Strategy

Repeated Addition

Repeat the addition of one factor by the number of times the other factor

4 x 9



Multiplication Strategy

Making Friendly Numbers

Partition to use a friendly number to solve a more challenging problem

$$3 \times 37$$

$$(3 \times 40) - (3 \times 3)$$

$$3 \times 40 = 120$$

$$3 \times 3 = 9$$

$$120 - 9 = \boxed{111}$$

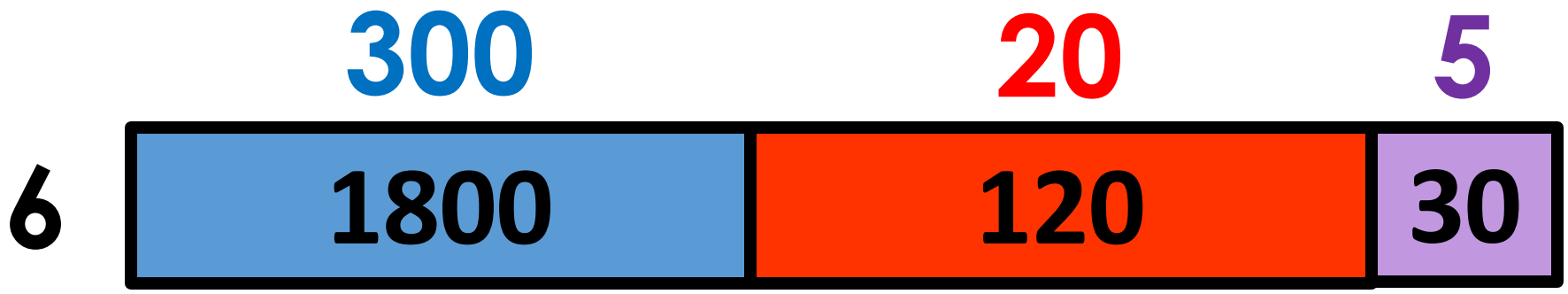
Multiplication Strategy

Partial Products

Partition one factor using place value and use distributive property to multiply

$$6 \times 325$$

$$6 \times (300 + 20 + 5)$$



$$1800 + 120 + 5 = \boxed{1950}$$

Multiplication Strategy

Breaking Factors into Smaller Factors

Break a factor into smaller factors and apply the associative property

$$8 \times 25$$

So… $2 \times 4 \times 25 =$

$$2 \times 100 = 200$$

Multiplication Strategy

Doubling and Halving

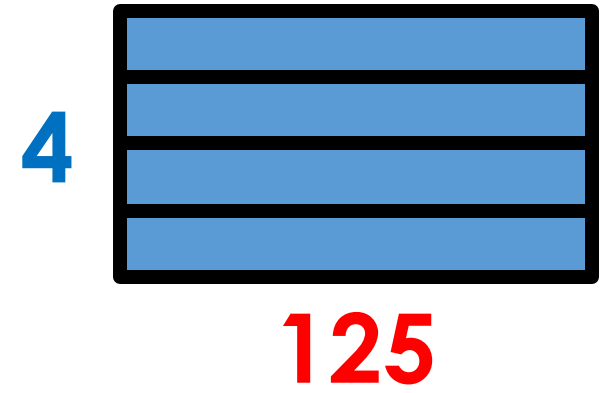
Double one factor and halve the other to simplify a problem

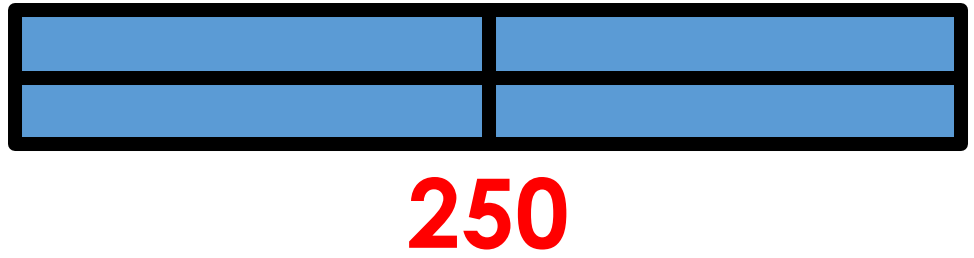
4×125

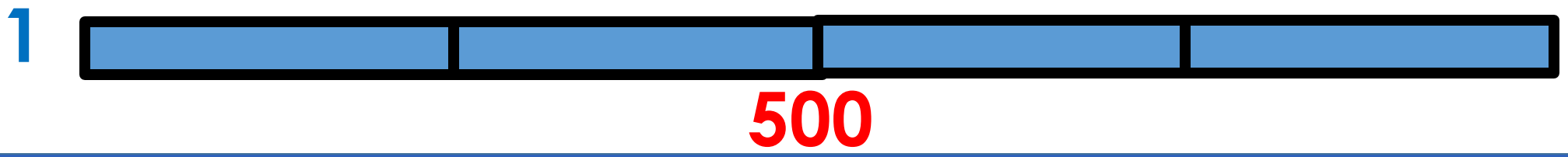
$= 2 \times 250$

$= 1 \times 500$

$= \boxed{500}$





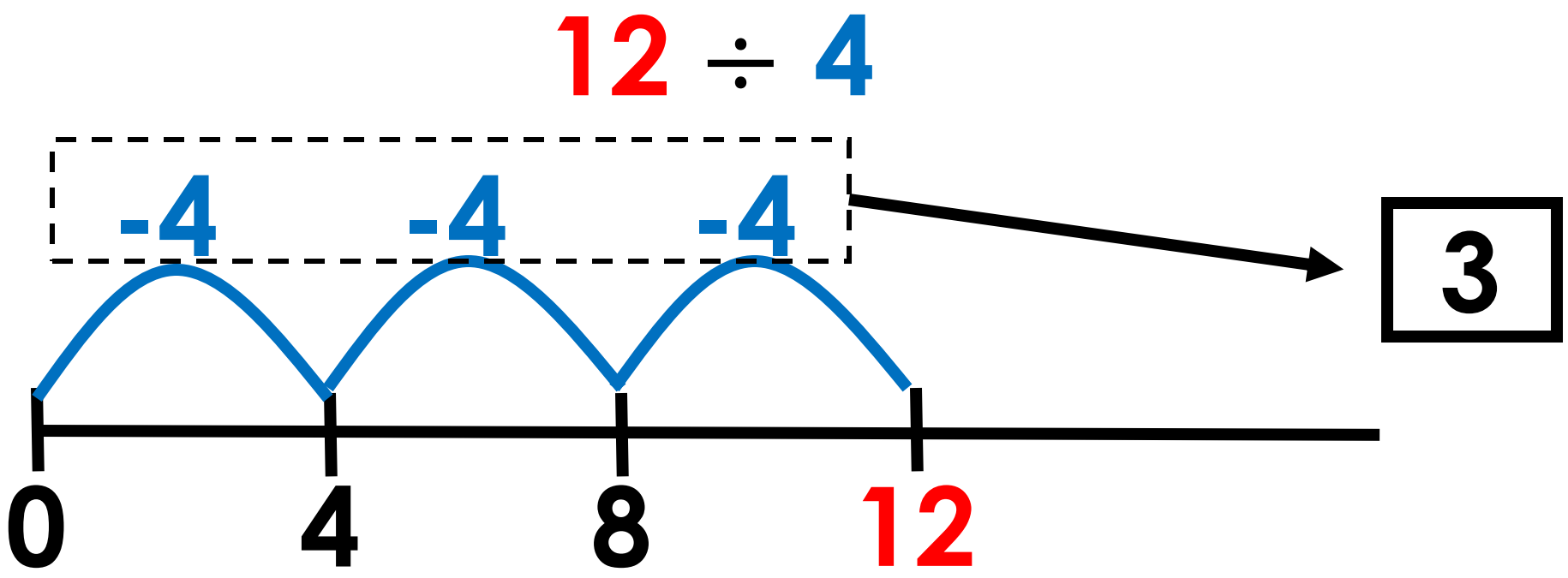


Division Strategies

Division Strategy

Repeated Subtraction

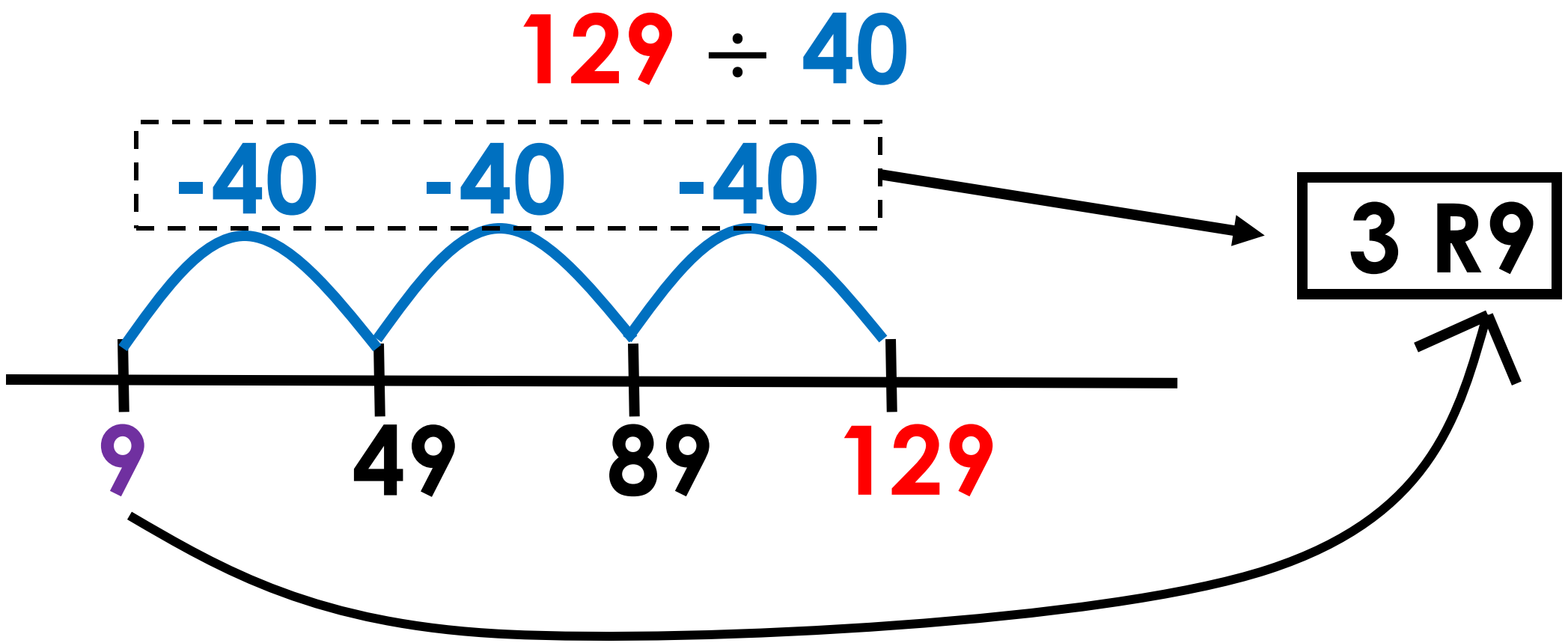
Repeat the subtraction of the divisor until the difference is less than the divisor



Division Strategy

Repeated Subtraction

Repeat the subtraction of the divisor until the difference is less than the divisor



Division Strategy

Partial Quotients

Partition the dividend into parts easily divisible by the divisor

$$56 \div 4$$

Think...

$$(40 \div 4) + (16 \div 4)$$

$$10 + 4 = 14$$

Division Strategy

Partial Quotients

Partition the dividend into parts easily divisible by the divisor

$$58 \div 4$$

Think...

$$(40 \div 4) + (16 \div 4) + 2$$

$$10 + 4 = 14\ R2$$

Division Strategy

Multiplying Up

Use the multiples of the divisor to find the total dividend

$$65 \div 5$$

$$5 \times 10 = 50$$

$$5 \times 3 = 15$$

$$5 \times 13 = 65$$

$$65 \div 5 = \underline{13}$$

Division Strategy

Proportional Reasoning

Divide the dividend and the divisor by the same amount to simplify the problem

$$192 \div 8$$

$\div 2 \quad \div 2$

$$= 96 \div 4$$

$\div 2 \quad \div 2$

$$= 48 \div 2$$

$\div 2 \quad \div 2$

$$= 24 \div 1 = \boxed{24}$$

$$\frac{192}{8} = \frac{96}{4} = \frac{48}{2} = 24$$