

# Math 6

## Percents

Place the numbers from 0 to 100 in the boxes below to make the statement true.

% of  is  % of

0 10 20 30 40 50 60 70 80 90 100

Place the numbers from 0 to 100 in the boxes below to make the statement true.

**10** % of **50** is  % of

0 10 20 30 40 50 60 70 80 90 100

Place the numbers from 0 to 100 in the boxes below to make the statement true.

**10** % of **50** is **50** % of **10**

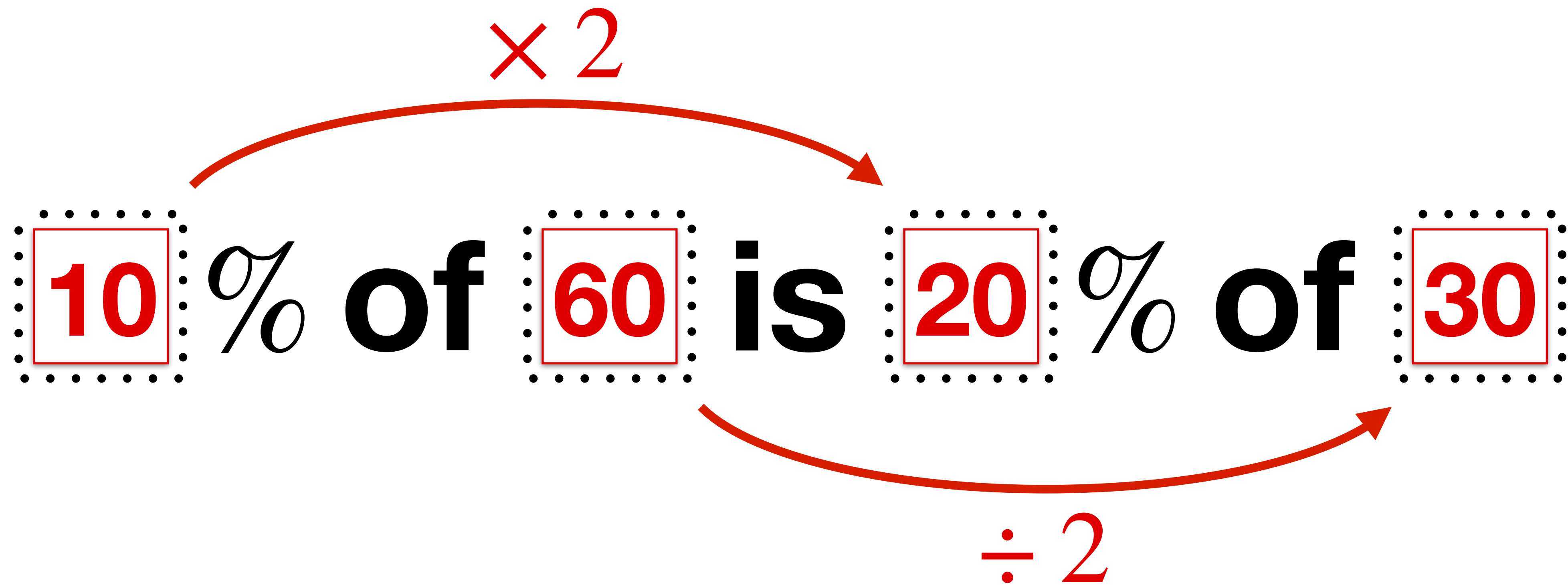
0 10 20 30 40 50 60 70 80 90 100

Place the numbers from 0 to 100 in the boxes below to make the statement true.

**10** % of **60** is  % of

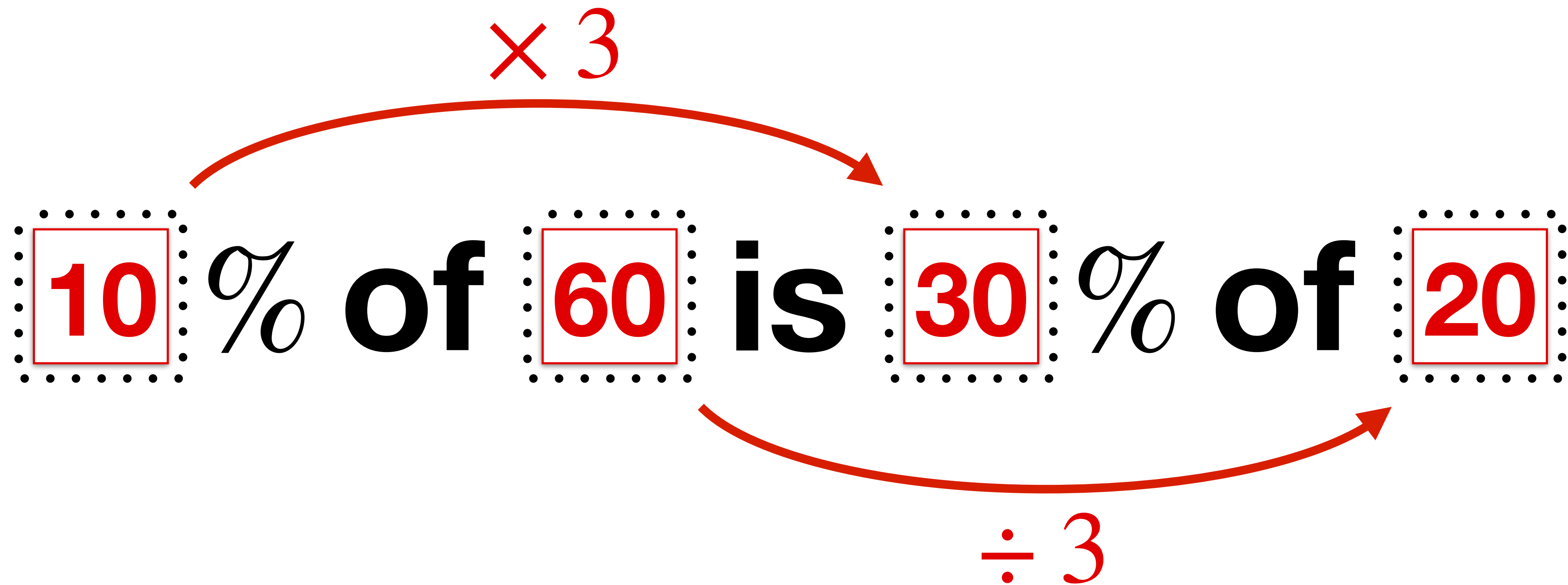
0 10 20 30 40 50 60 70 80 90 100

Place the numbers from 0 to 100 in the boxes below to make the statement true.



0 10 20 30 40 50 60 70 80 90 100

Place the numbers from 0 to 100 in the boxes below to make the statement true.



0	10	20	30	40	50	60	70	80	90	<u>100</u>
---	----	----	----	----	----	----	----	----	----	------------

Place the numbers from 0 to 100 in the boxes below to make the statement true.

% of  is  % of

0

10

20

30

40

50

60

70

80

90

100



Place the numbers from 0 to 100 in the boxes below to make the statement true.

% of   
is greater than

% of

0	10	20	30	40	50	60	70	80	90	<u>100</u>
---	----	----	----	----	----	----	----	----	----	------------

Place the digits from 0 to 9 in the  
boxes below to make the statement true.

% of   
is  % of

0

1

2

3

4

5

6

7

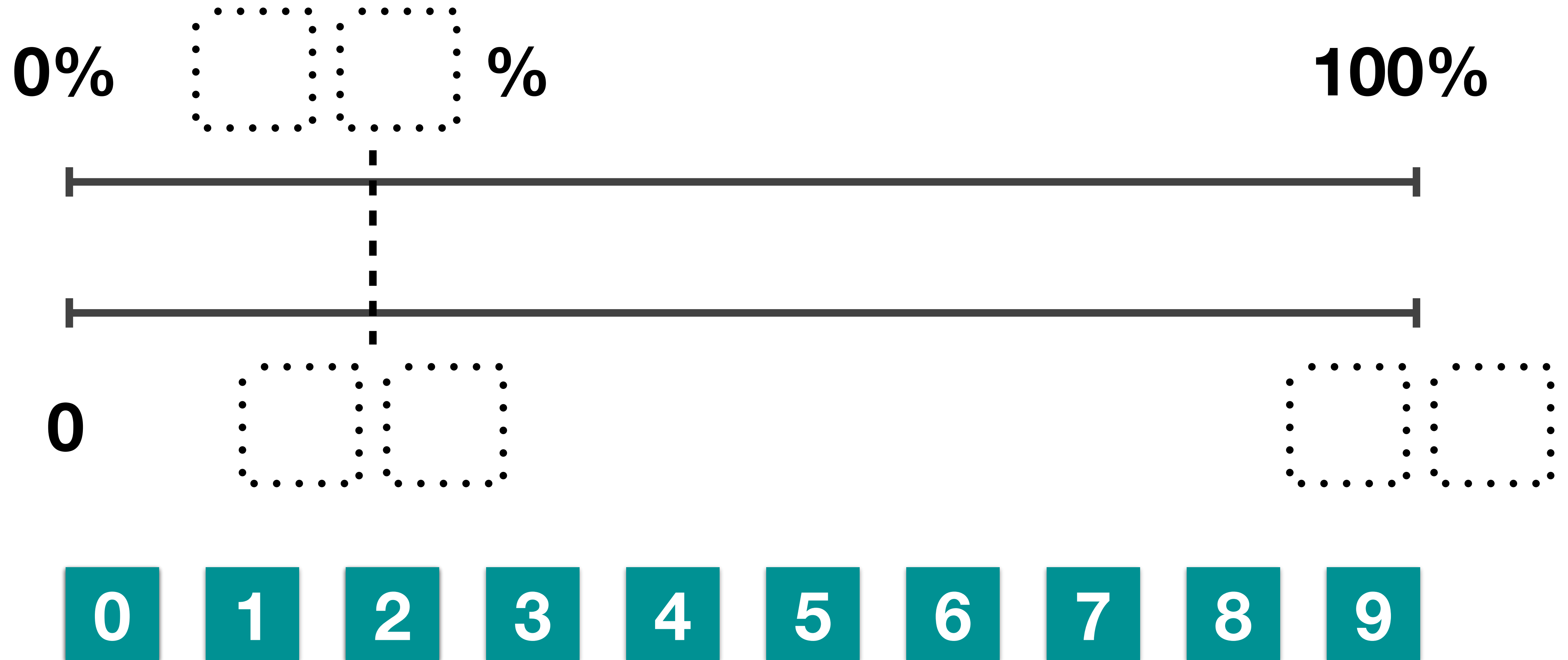
8

9

The double number line below represents the solution to a percent problem.

What could the missing numbers be?

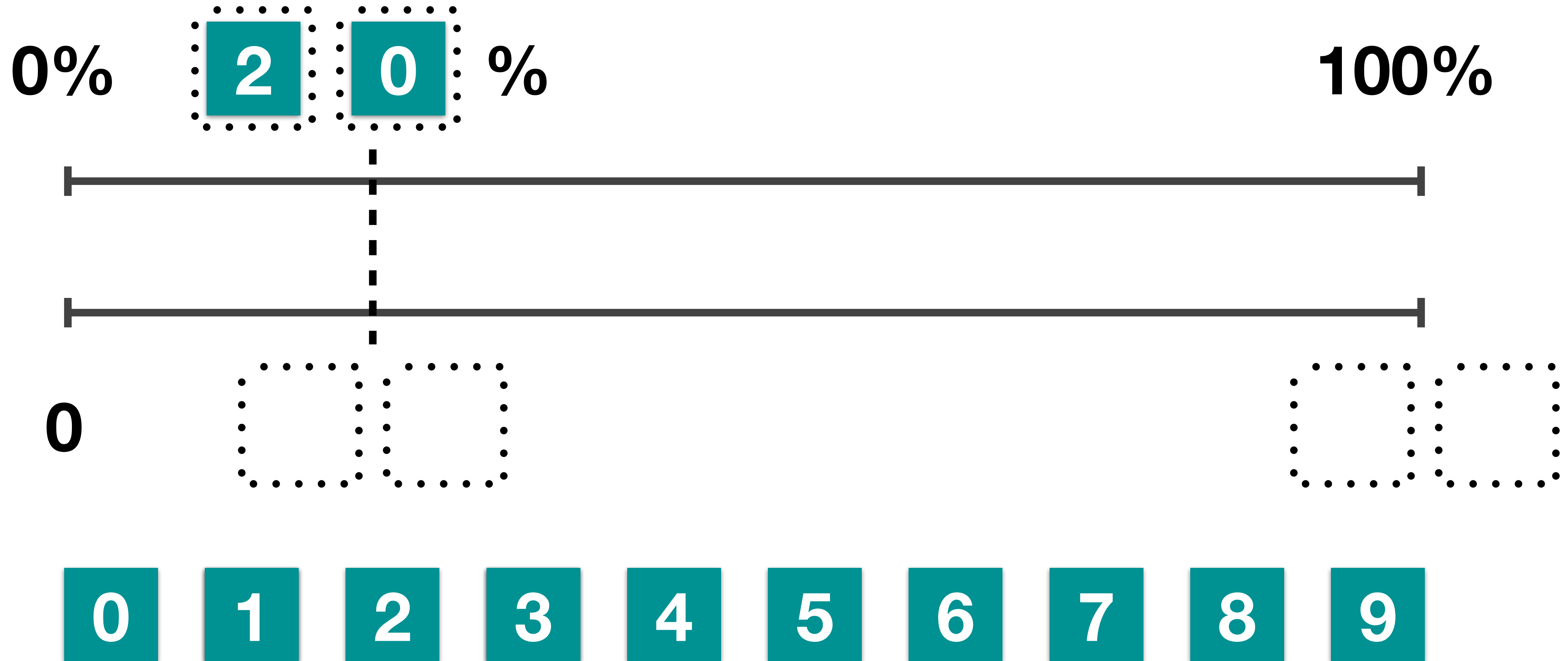
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

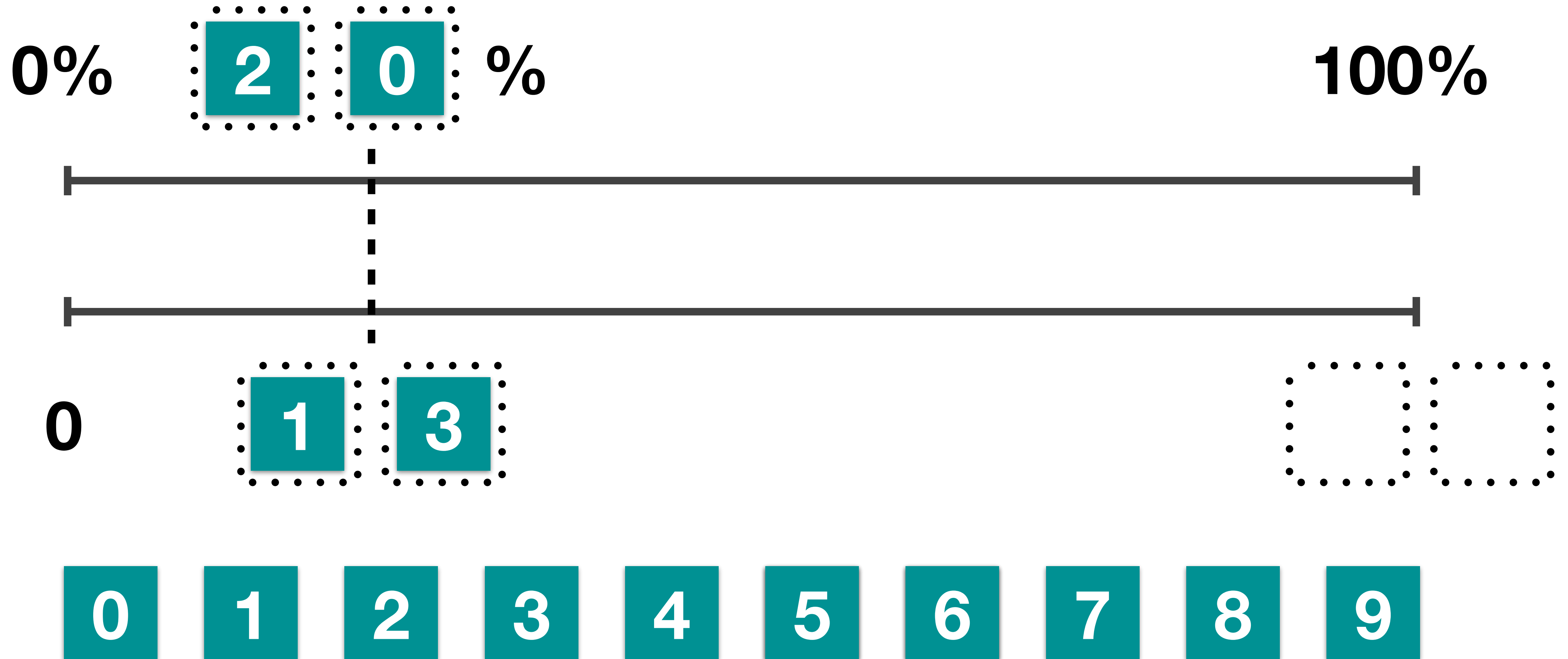
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

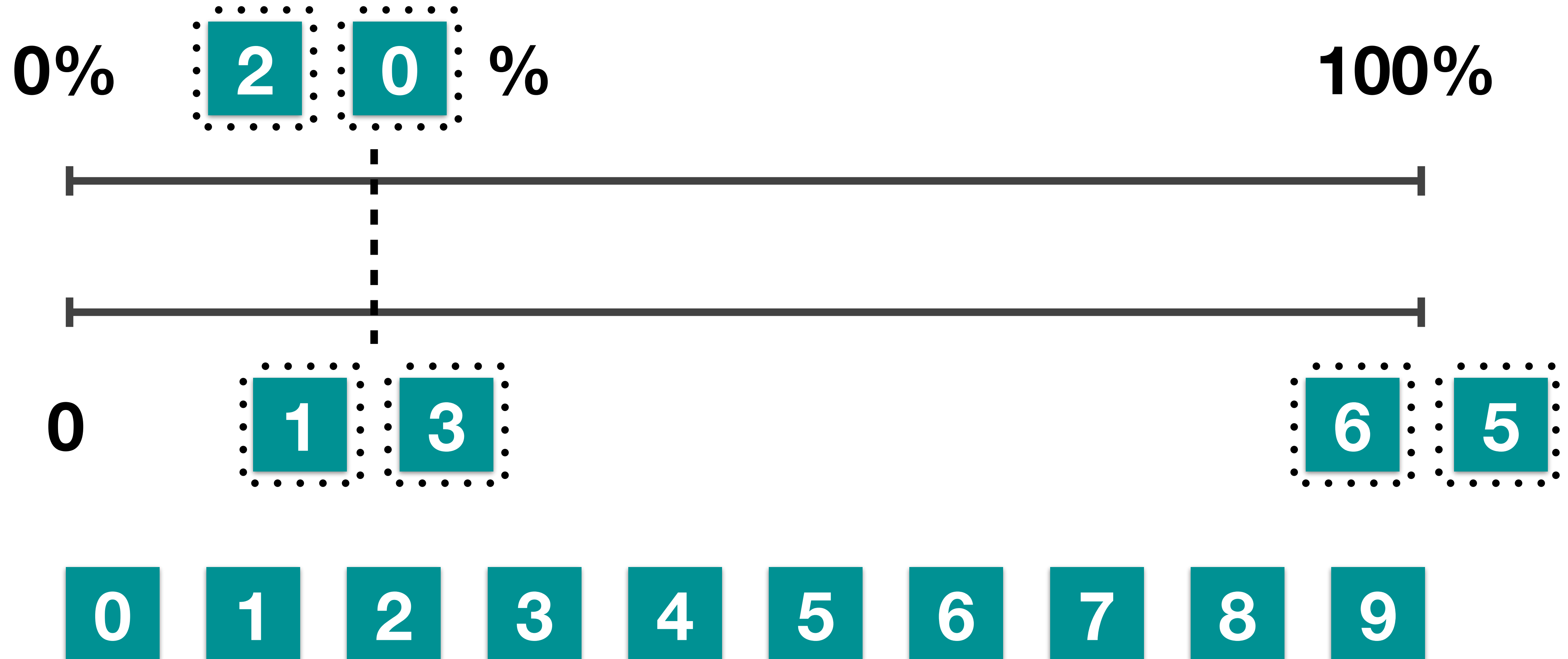
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

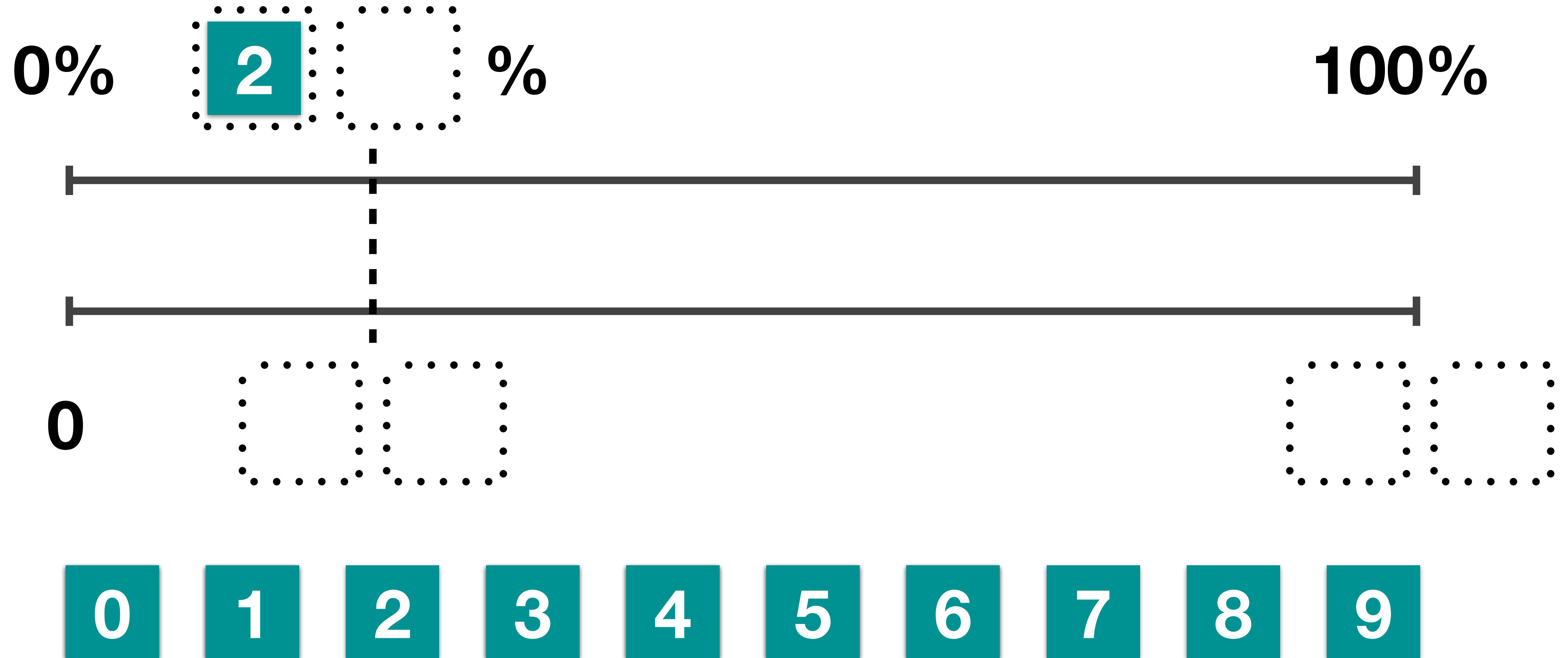
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

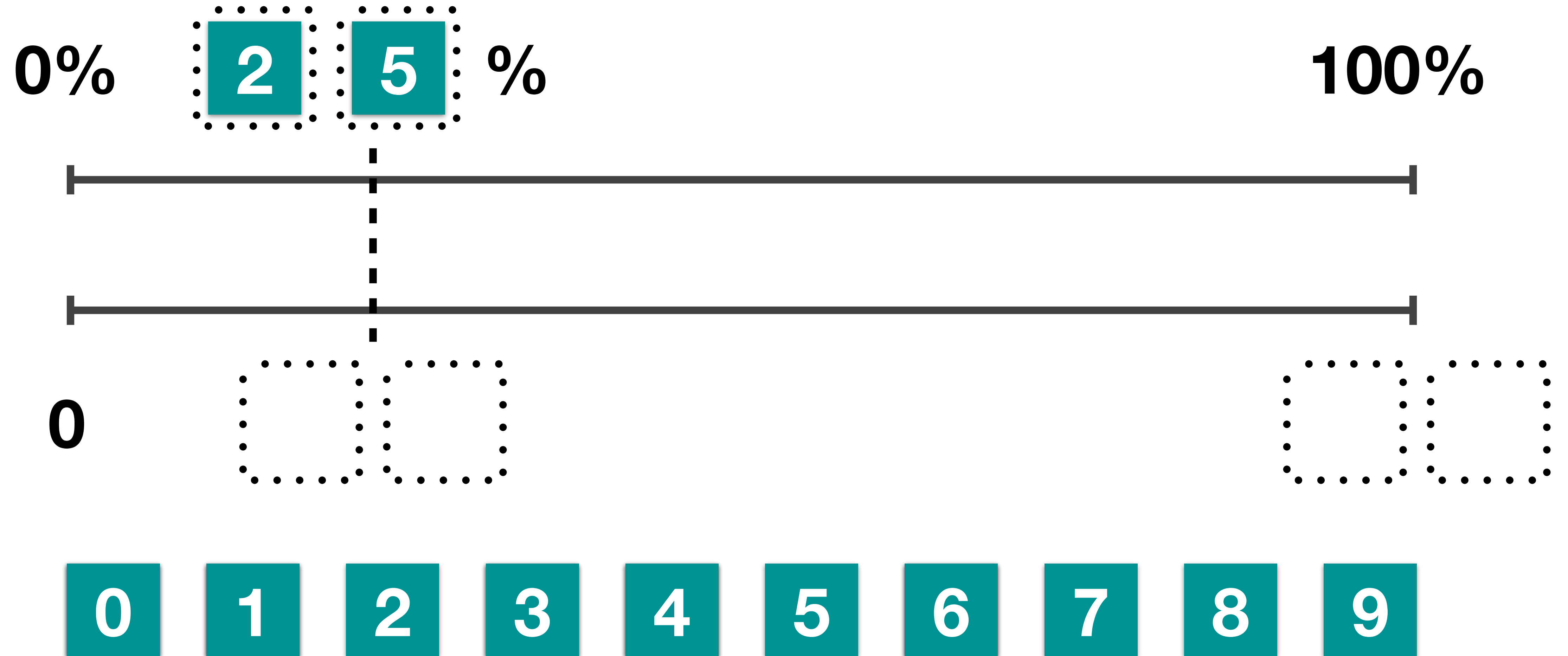
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

Place digits from 0 to 9 in the boxes below.

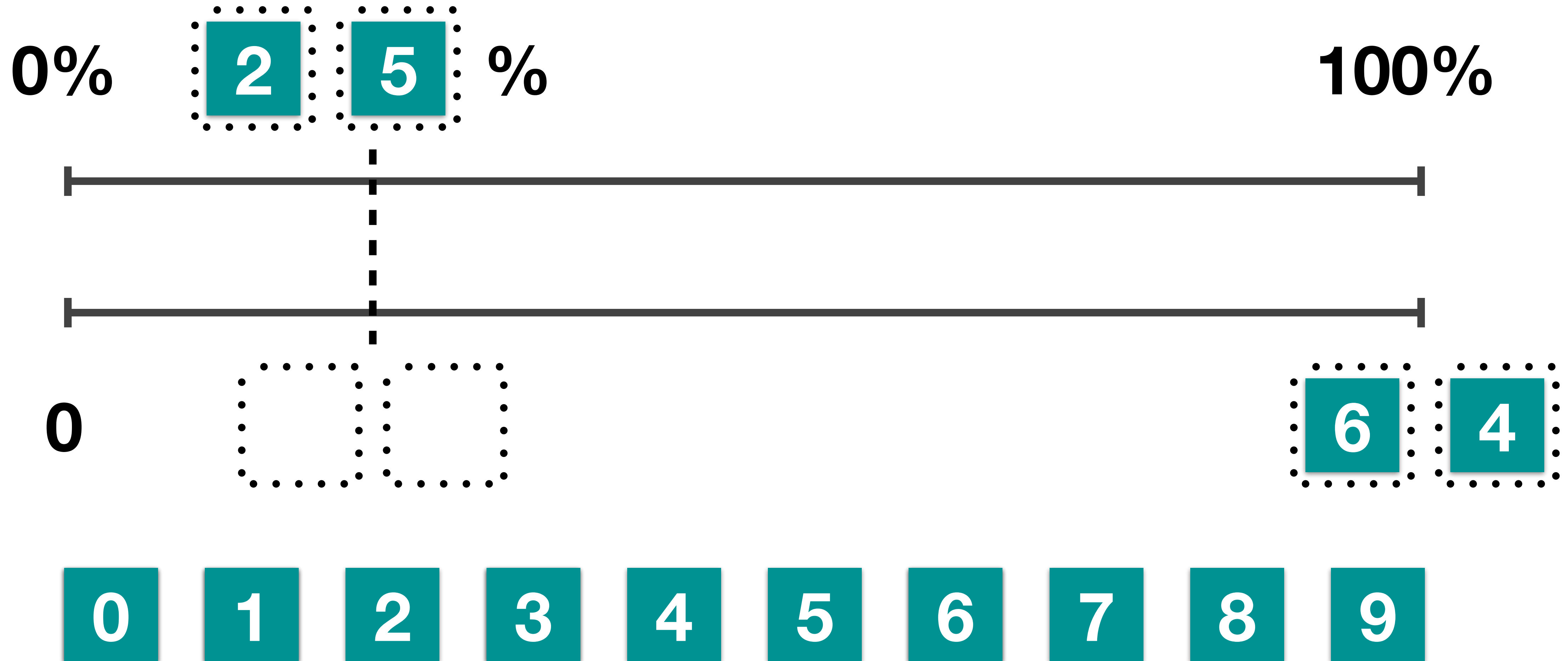




The double number line below represents the solution to a percent problem.

What could the missing numbers be?

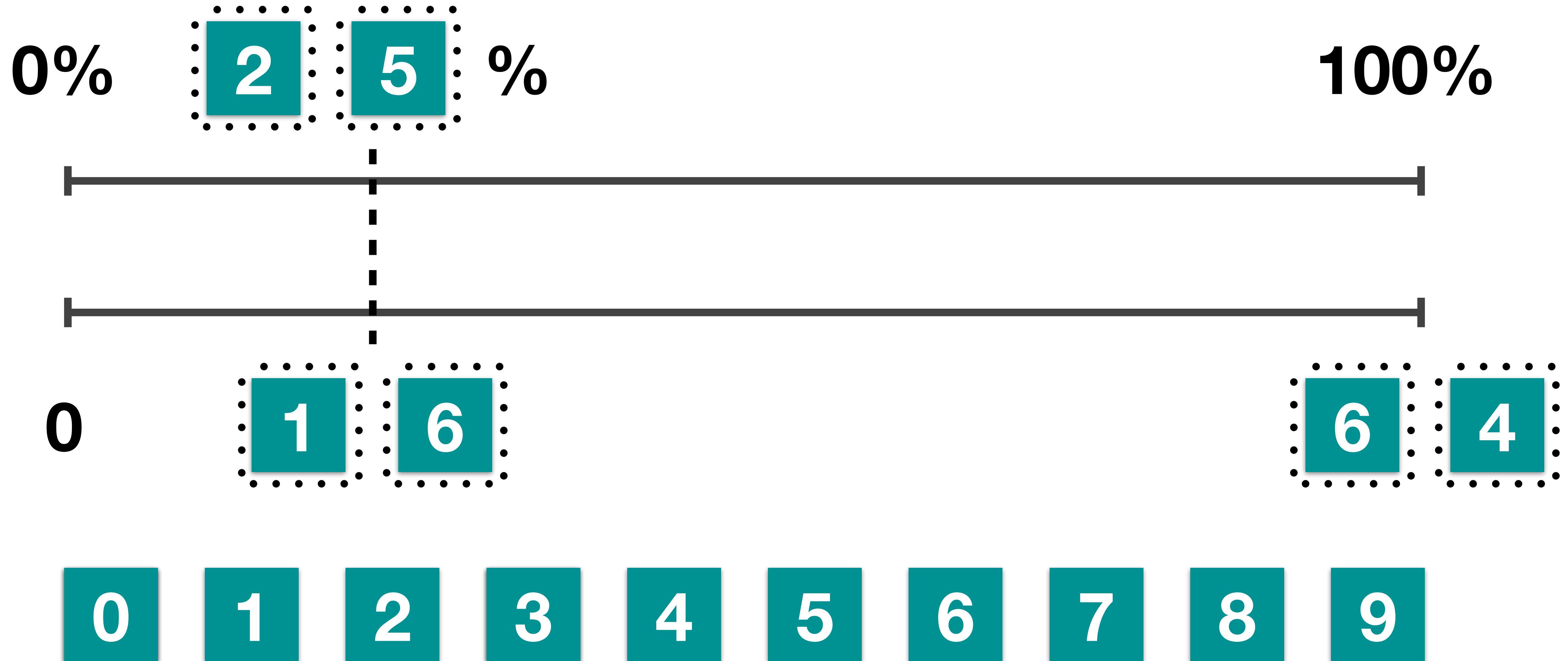
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

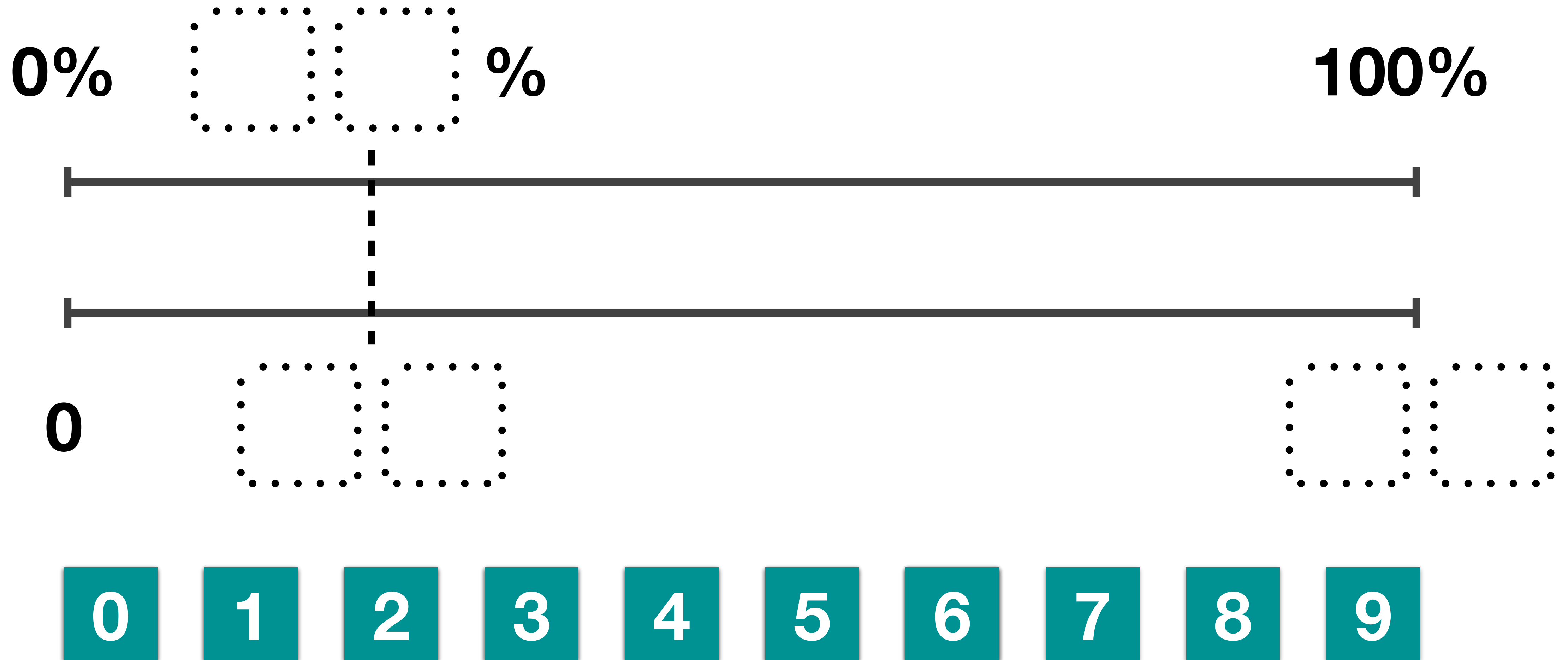
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

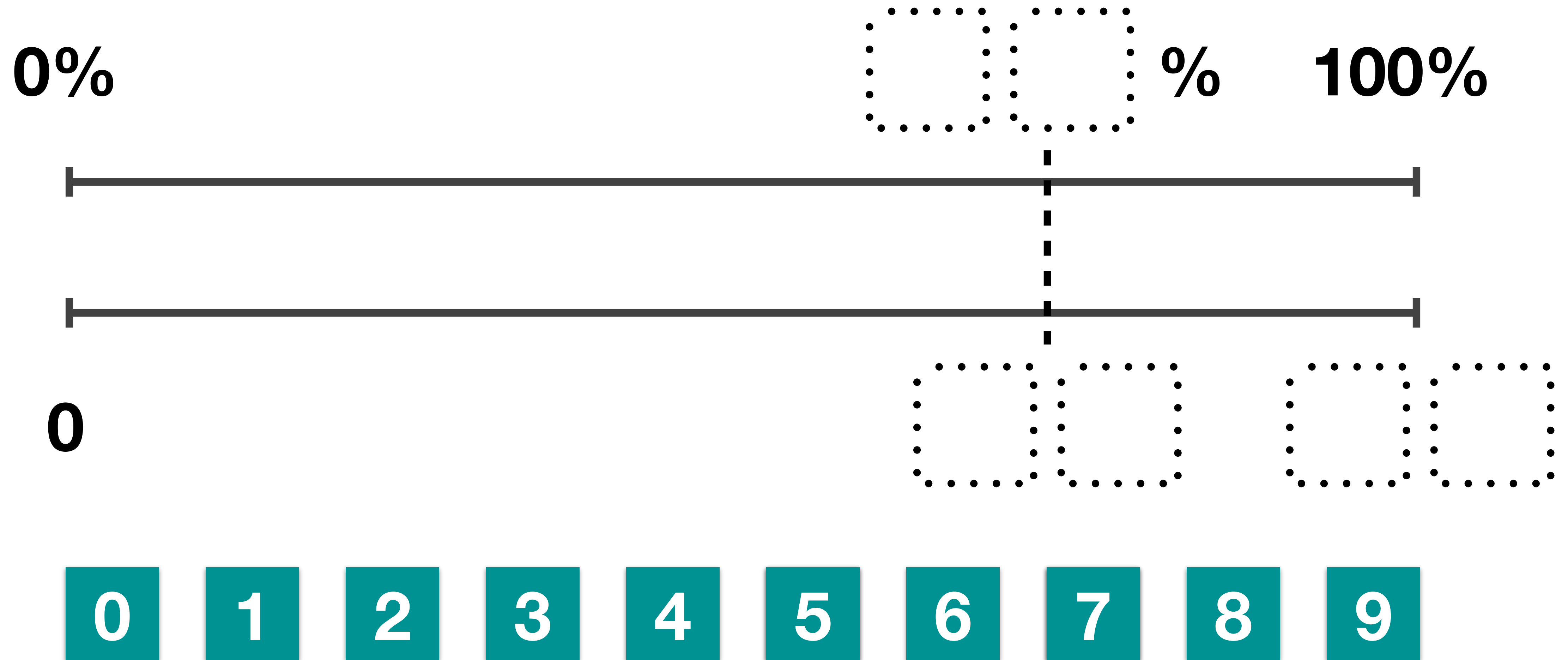
Place digits from 0 to 9 in the boxes below.



The double number line below represents the solution to a percent problem.

What could the missing numbers be?

Place digits from 0 to 9 in the boxes below.



Place the digits from 0 to 9 in the  
boxes below to make the statement true.

$$\frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}} < \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}\boxed{\phantom{0}}} < 50\% < \frac{\boxed{\phantom{0}}\boxed{\phantom{0}}}{\boxed{\phantom{0}}\boxed{\phantom{0}}\boxed{\phantom{0}}}$$

0

1

2

3

4

5

6

7

8

9

Place the digits from 0 to 9 in the  
boxes below to make the statement true.

$$\frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}} < \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}\boxed{\phantom{0}}} < 50\% < \frac{\boxed{\phantom{0}}\boxed{\phantom{0}}}{\boxed{1}\boxed{\phantom{0}}\boxed{\phantom{0}}}$$

0

2

3

4

5

6

7

8

9

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}} < \frac{\boxed{\phantom{0}}}{\boxed{2}\boxed{\phantom{0}}} < 50\% < \frac{\boxed{\phantom{0}}\boxed{\phantom{0}}}{\boxed{1}\boxed{\phantom{0}}\boxed{\phantom{0}}}$$

0

3

4

5

6

7

8

9

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} < \frac{\boxed{\phantom{00}}}{\boxed{2}\boxed{0}} < 50\% < \frac{\boxed{\phantom{00}}\boxed{\phantom{00}}}{\boxed{1}\boxed{\phantom{00}}\boxed{\phantom{00}}}$$

3 4 5 6 7 8 9



Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline \phantom{0} \\ \hline \phantom{0} \\ \hline \end{array} < \begin{array}{|c|c|} \hline \phantom{0} \\ \hline \phantom{0} \phantom{0} \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline \phantom{0} \phantom{0} \\ \hline \phantom{0} \phantom{0} \phantom{0} \\ \hline \end{array}$$

3 4 5 6 7 8

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline \phantom{00} \\ \hline 8 \\ \hline \end{array} < \begin{array}{|c|c|} \hline 9 \\ \hline 2 & 0 \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline \phantom{00} & \phantom{00} \\ \hline 1 & \phantom{00} & \phantom{00} \\ \hline \end{array}$$

3 4 5 6 7

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline 3 \\ \hline 8 \\ \hline \end{array} < \begin{array}{|c|c|} \hline 9 \\ \hline 2 & 0 \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline & & \\ \hline 1 & & \\ \hline \end{array}$$

4 5 6 7

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline 3 \\ \hline 8 \\ \hline \end{array} < \begin{array}{|c|c|} \hline 9 \\ \hline 2 & 0 \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline & & \\ \hline 1 & 4 & \\ \hline \end{array}$$

5 6 7

Place the digits from 0 to 9 in the boxes below to make the statement true.

The diagram shows a mathematical comparison between three numbers, each represented by a set of boxes. The first number is 38, the second is 920, and the third is a two-digit number followed by 146. The comparison is  $38 < 920 < 50\% < \text{[ ] [ ] 146}$ . The digits 5 and 7 are shown at the bottom.

3		9					
8		2	0				

5 7

Place the digits from 0 to 9 in the boxes below to make the statement true.

The diagram shows a comparison between three numbers, each represented by a set of boxes. The first number is 38, the second is 920, and the third is 7146. The comparison is 38 < 920 < 50% < 7146. The digit 5 is shown in a box below the comparison.

3		9		7		
8	2	0	50%	1	4	6

5

Place the digits from 0 to 9 in the boxes below to make the statement true.

38 < 920 < 50% < 75146

Place the digits from 0 to 9 in the  
boxes below to make the statement true.

$$\frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}} < \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}\boxed{\phantom{0}}} < 50\% < \frac{\boxed{\phantom{0}}\boxed{\phantom{0}}}{\boxed{\phantom{0}}\boxed{\phantom{0}}\boxed{\phantom{0}}}$$

0

1

2

3

4

5

6

7

8

9



Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline 1 \\ \hline 4 \\ \hline \end{array} < \begin{array}{|c|c|} \hline \phantom{0} \\ \hline \phantom{0} \phantom{0} \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline \phantom{0} \phantom{0} \\ \hline \phantom{0} \phantom{0} \phantom{0} \\ \hline \end{array}$$

0

2

3

5

6

7

8

9

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline 1 \\ \hline 4 \\ \hline \end{array} < \begin{array}{|c|c|} \hline \phantom{0} \\ \hline 3 & 2 \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline \phantom{0} & \phantom{0} \\ \hline \phantom{0} & \phantom{0} & \phantom{0} \\ \hline \end{array}$$

0

5

6

7

8

9

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline 1 \\ \hline 4 \\ \hline \end{array} < \begin{array}{|c|c|} \hline 9 \\ \hline 3 & 2 \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline & & \\ \hline & & \\ \hline \end{array}$$

0

5

6

7

8

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{|c|} \hline 1 \\ \hline 4 \\ \hline \end{array} < \begin{array}{|c|c|} \hline 9 \\ \hline 3 & 2 \\ \hline \end{array} < 50\% < \begin{array}{|c|c|c|} \hline & & \\ \hline 0 & & \\ \hline \end{array}$$

5 6 7 8

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$\begin{array}{c} \boxed{1} \\ \hline \boxed{4} \end{array} < \begin{array}{c} \boxed{9} \\ \hline \boxed{3} \quad \boxed{2} \end{array} < 50\% < \begin{array}{c} \boxed{5} \quad \boxed{6} \\ \hline \boxed{0} \quad \boxed{7} \quad \boxed{8} \end{array}$$

Place the digits from 1 to 9 in the boxes below to make the statement true.

$$\frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}} < \frac{\boxed{\phantom{00}}}{\boxed{\phantom{00}}\boxed{\phantom{00}}} < 50\% < \frac{\boxed{\phantom{00}}\boxed{\phantom{00}}}{\boxed{\phantom{00}}\boxed{\phantom{00}}}$$

1

2

3

4

5

6

7

8

9

Place the digits from 0 to 9 in the boxes below to make the statement true.

$$50\% < \frac{\boxed{\phantom{0}}\boxed{\phantom{0}}}{\boxed{\phantom{0}}\boxed{\phantom{0}}} < \frac{\boxed{\phantom{0}}}{\boxed{\phantom{0}}}$$

0

1

2

3

4

5

6

7

8

9

Place the digits from 0 to 9 in the  
boxes below to make the statement true.

$$\begin{array}{|c|} \hline \square \\ \hline \square \square \\ \hline \end{array} < \begin{array}{|c|c|} \hline \square \square \\ \hline \square \square \square \\ \hline \end{array} < 50\%$$

0

1

2

3

4

5

6

7

8

9



Place the given numbers in the boxes below so that  
the total is as **small/large/close to \$500** as possible.

*(Each number can be used at most once.)*

\$

%

**OFF!**

\$

%

**OFF!**

\$

%

**OFF!**

**60**

**80**

**180**

**320**

**560**

**10**

**15**

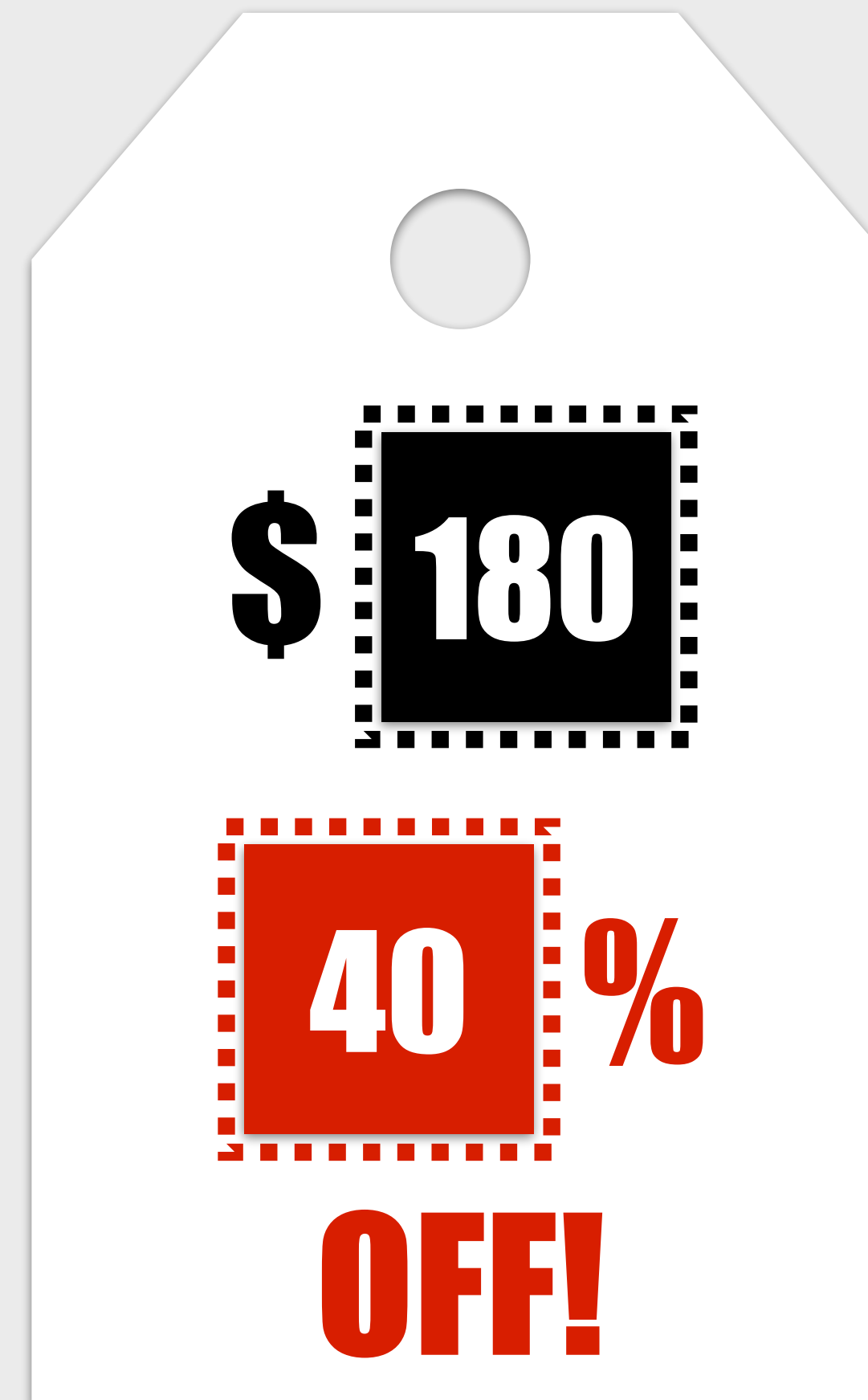
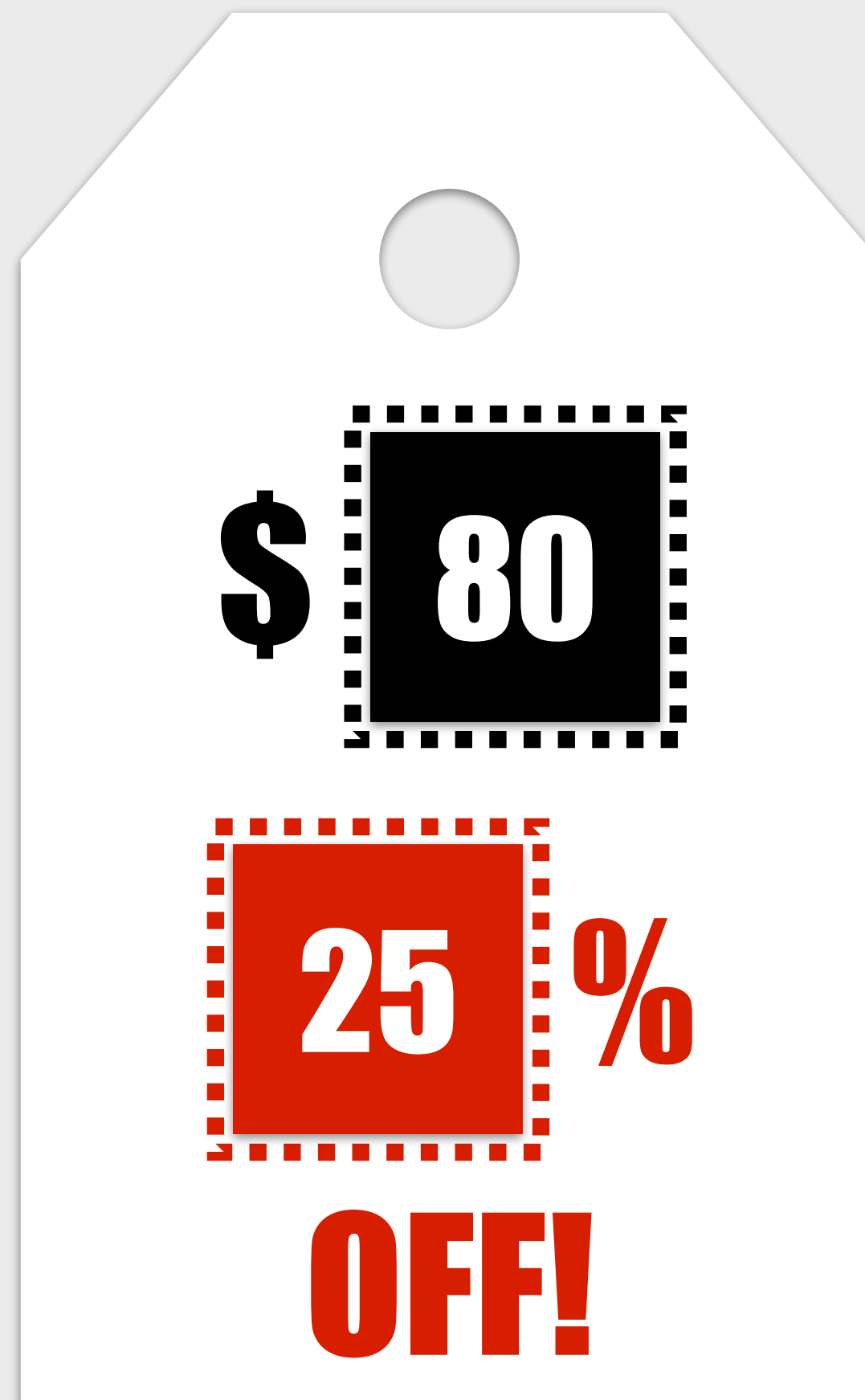
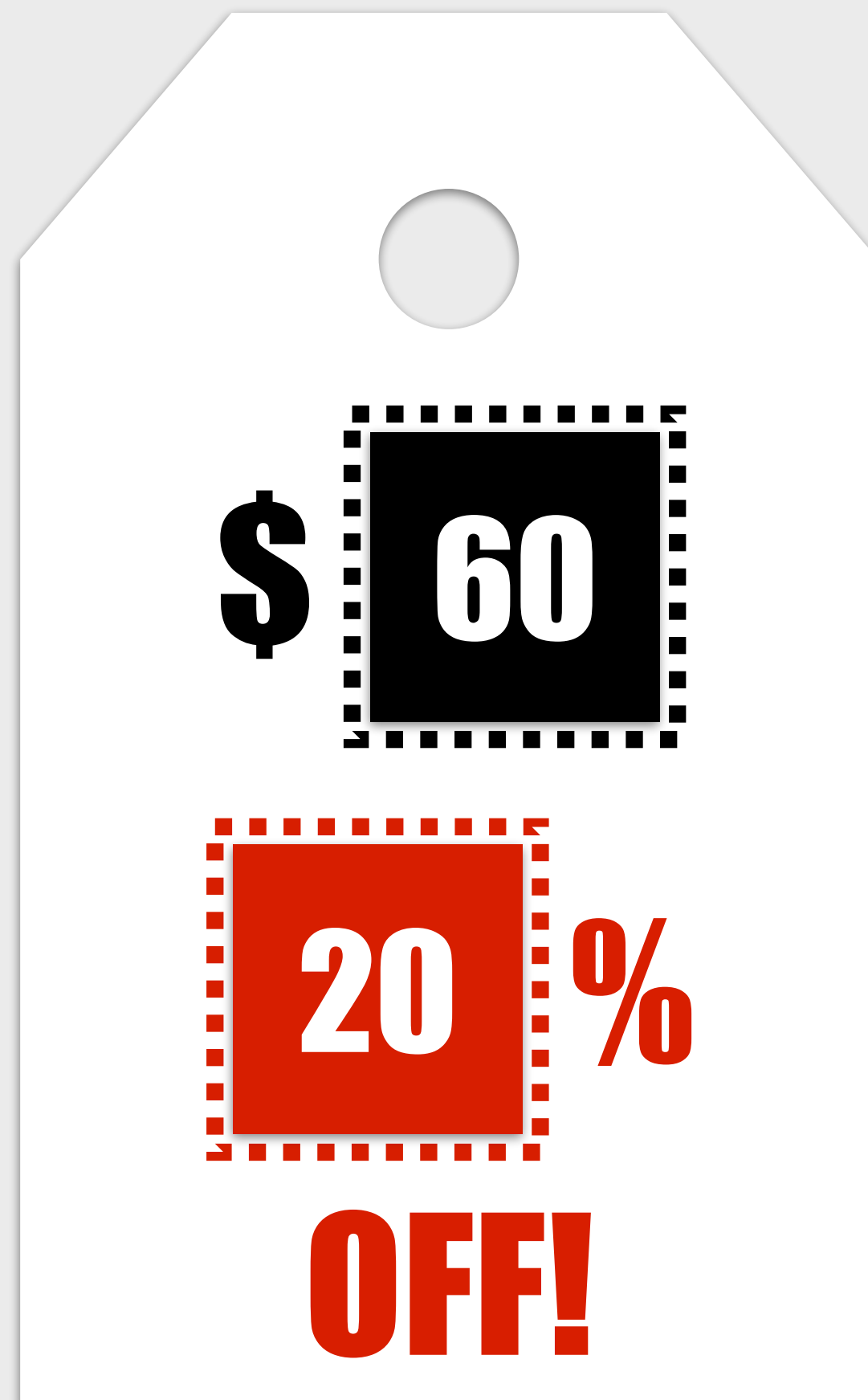
**20**

**25**

**40**

Place the given numbers in the boxes below so that the total is as **small/large/close to \$500** as possible.

*(Each number can be used at most once.)*



320

560

10

15

Place the given numbers in the boxes below so that  
the total is as **small/large/close to \$500** as possible.

*(Each number can be used at most once.)*

\$

%

**OFF!**

\$

%

**OFF!**

\$

%

**OFF!**

**60**

**80**

**180**

**320**

**560**

**10**

**15**

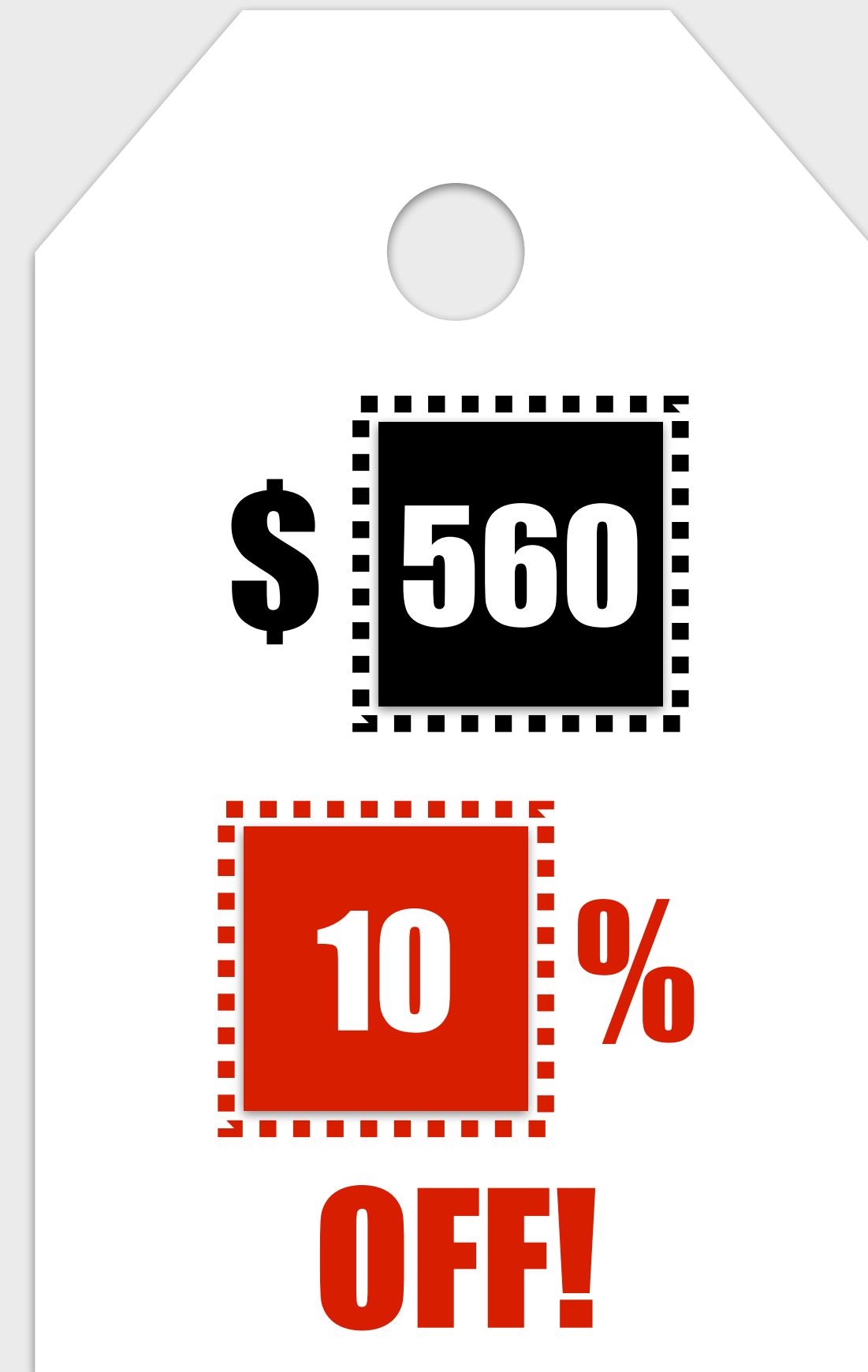
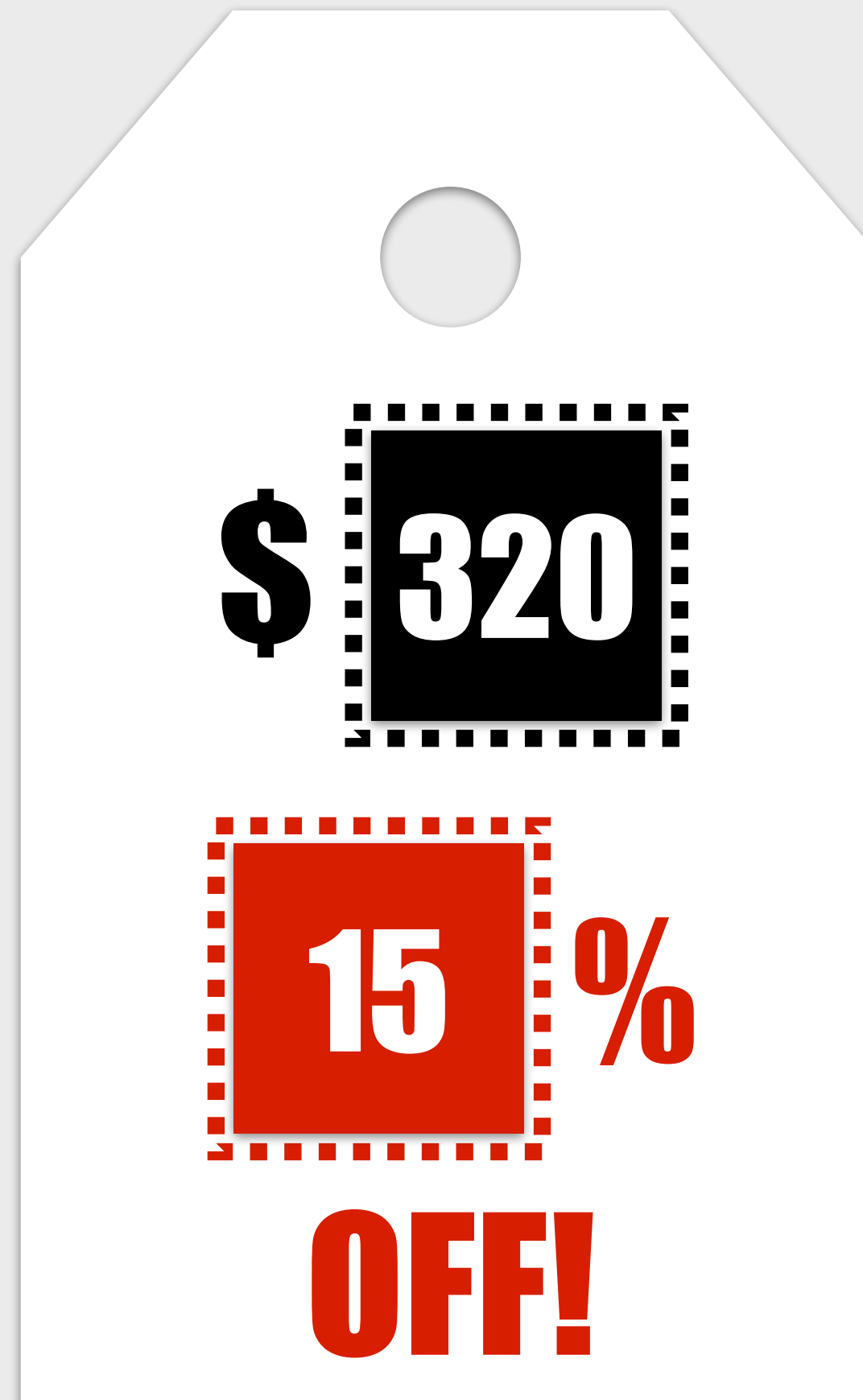
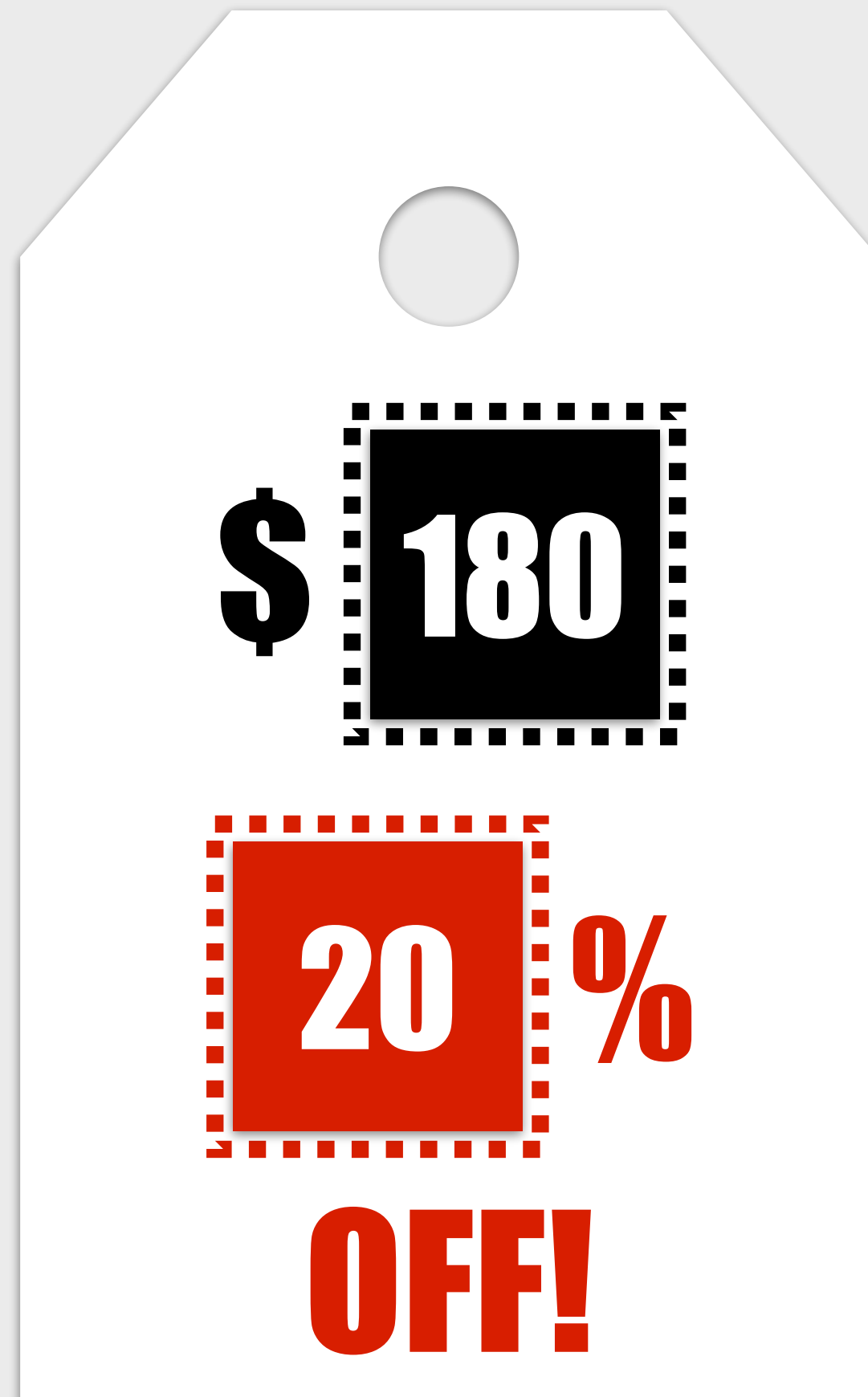
**20**

**25**

**40**

Place the given numbers in the boxes below so that the total is as **small/large/close to \$500** as possible.

*(Each number can be used at most once.)*



60

80

25

40

Place the given numbers in the boxes below so that the total is as **small/large/close to \$500** as possible.

*(Each number can be used at most once.)*

\$

%

**OFF!**

\$

%

**OFF!**

\$

%

**OFF!**

**60**

**80**

**180**

**320**

**560**

**10**

**15**

**20**

**25**

**40**

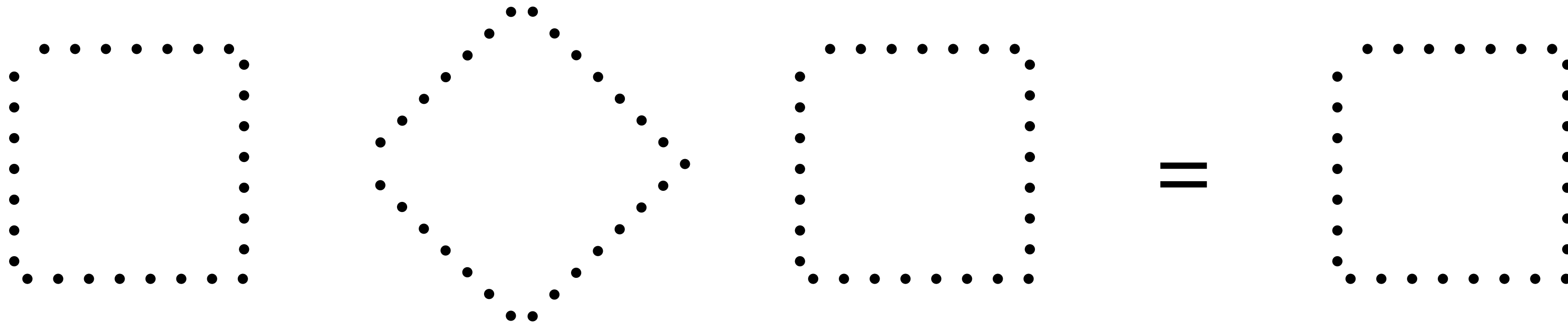


# Math 7

## Operations with Integers

Place the integers and an operation in the boxes to make the equation true.

*(Each integer can be used only once.)*



-9

-6

-3

+3

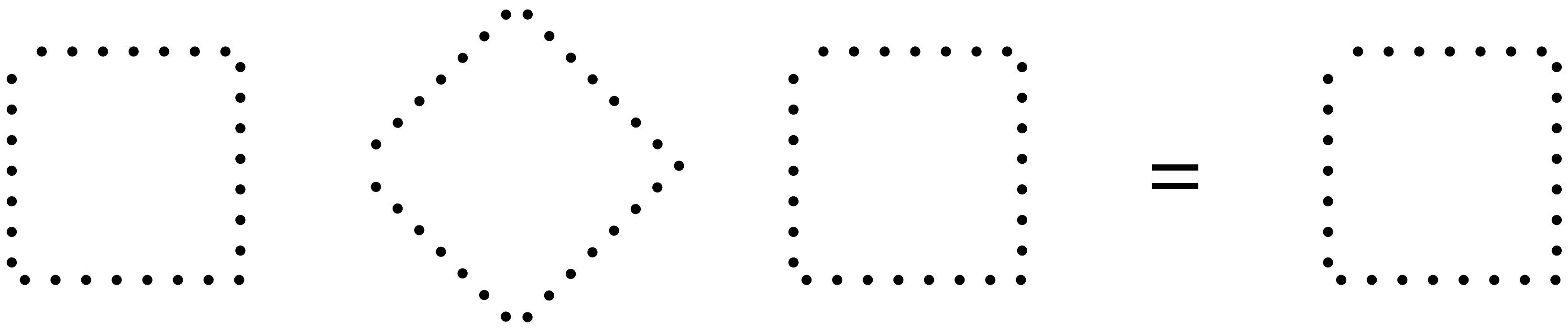
+6

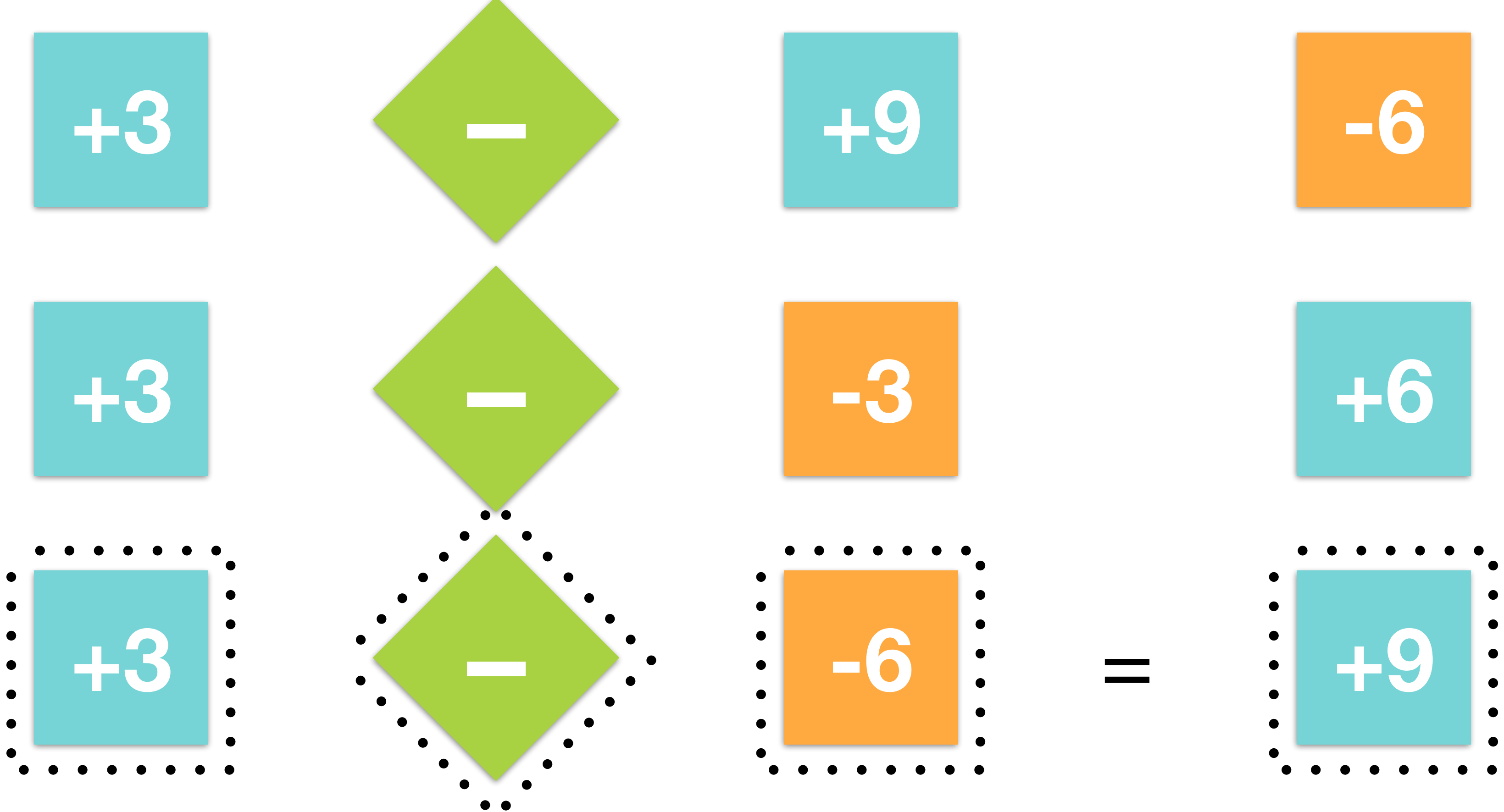
+9

+

-



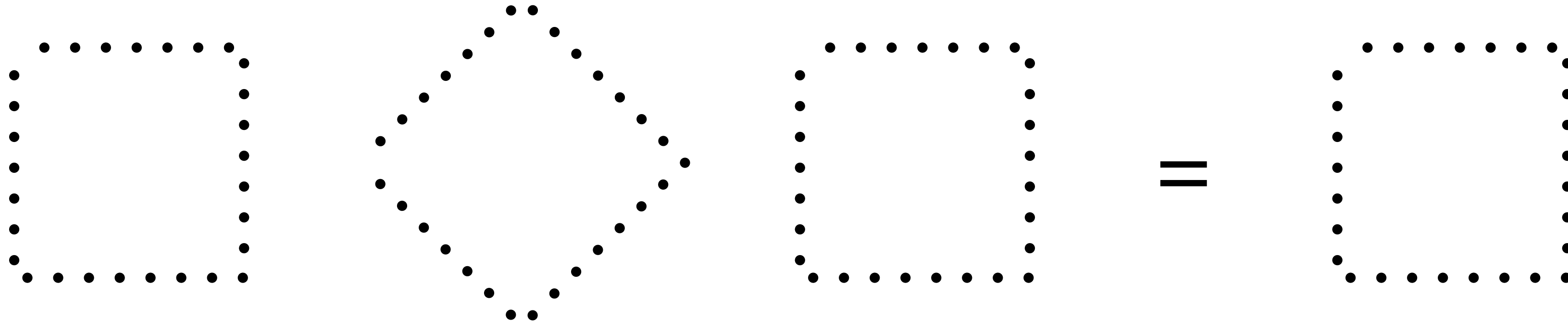




+3	+	+6	=	+9
+3	+	-6	=	-3
+3	+	-9	=	-6
+3	-	+6	=	-3
+3	-	+9	=	-6
+3	-	-3	=	+6
+3	-	-6	=	+9

Place the integers and an operation in the boxes to make the equation true.

*(Each integer can be used only once.)*



Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

$$\boxed{\phantom{00}} - (\boxed{\phantom{00}} + \boxed{\phantom{00}}) \times \boxed{\phantom{00}}$$

-5

-4

-3

-2

-1

0

+1

+2

+3

+4

+5

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

−

(

+

)

×

- −5

−4

−3

−2

−1

0

+1

+2

+3

+4

+5

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

−

(

+

)

×

- −5

−4

−3

−2

−1

0

+1

+2

+3

+4

+5

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

−

+5

+

+4

×

−5

−4

−3

−2

−1

0

+1

+2

+3



Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

−

(

+5

+

+4

)

×

+3

−5

−4

−3

−2

−1

0

+1

+2

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

−

(

+3

+

+4

)

×

+5

- −5

−4

−3

−2

−1

0

+1

+2

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

−

+5

+

+4

)

×

−5

−4

−3

−2

−1

0

+1

+2

+3

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

−

(

+5

+

+4

)

×

−5

- −4

−3

−2

−1

0

+1

+2

+3

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

+3

−

(

+5

+4

+

+5

+4

)

×

−5

−4

−3

−2

−1

0

+1

+2

Place four integers from  $-5$  to  $+5$  in the boxes below to make the *greatest* value.

*(Each integer can be used only once.)*

$$\boxed{+3} - \left( \boxed{+5} + \boxed{+4} \right) \times \boxed{-5}$$

-4

-3

-2

-1

0

+1

+2

Place the integers  $-9$  to  $+9$  in the boxes to make the *smallest* value.

*(Each integer can be used only once.)*

$$\boxed{\phantom{00}} \times \left( \boxed{\phantom{00}} + \boxed{\phantom{00}} \right)$$

-9	-8	-7	-6	-5	-4	-3	-2	-1	0
+1	+2	+3	+4	+5	+6	+7	+8	+9	

Place the integers  $-9$  to  $+9$  in the boxes to make the *biggest* value.

*(Each integer can be used only once.)*

$$\left( \boxed{\phantom{00}} \times \boxed{\phantom{00}} \right) - \left( \boxed{\phantom{00}} \div \boxed{\phantom{00}} \right)$$

-9	-8	-7	-6	-5	-4	-3	-2	-1	0
+1	+2	+3	+4	+5	+6	+7	+8	+9	



# Mathematics 9

## Adding Polynomials

Place an integer from  $-9$  to  $+9$  in each box below to create a polynomial with the *least* amount of terms.

$$(\boxed{\phantom{0}}x^2 + \boxed{\phantom{0}}x + \boxed{\phantom{0}}) + (\boxed{\phantom{0}}x^{\boxed{\phantom{0}}} + \boxed{\phantom{0}})$$

*(Each integer can be used at most once.)*

# Foundations of Mathematics & Pre-calculus 10

## Factoring Polynomials

Place the numbers from 1 to 9 in the boxes below to make the statement true.

*(Each number can be used more than once.)*

$$x^2 + \boxed{\phantom{00}}x - 8 = (x + \boxed{\phantom{00}})(x - \boxed{\phantom{00}})$$

1

2

3

4

5

6

7

8

9

Place the numbers from 1 to 9 in the boxes below to make the statement true.  
(Each number can be used more than once.)

$$x^2 + \boxed{\phantom{00}}x - 8 = (x + \boxed{2})(x - \boxed{4})$$



Place the numbers from 1 to 9 in the boxes below to make the statement true.  
(Each number can be used more than once.)

$$x^2 + \boxed{\phantom{00}}x - 8 = (x + \boxed{4})(x - \boxed{2})$$



Place the numbers from 1 to 9 in the boxes below to make the statement true.

*(Each number can be used more than once.)*

$$x^2 + \boxed{2}x - 8 = (x + \boxed{4})(x - \boxed{2})$$



Place the numbers from 1 to 9 in the boxes below to make the statement true.

*(Each number can be used more than once.)*

$$x^2 + \boxed{\phantom{00}}x - 8 = (x + \boxed{\phantom{00}})(x - \boxed{\phantom{00}})$$

1

2

3

4

5

6

7

8

9



Place the numbers from 1 to 9 in the boxes below to make the statement true.  
(Each number can be used more than once.)

$$x^2 + \boxed{\phantom{00}}x - 8 = (x + \boxed{8})(x - \boxed{1})$$



Place the numbers from 1 to 9 in the boxes below to make the statement true.  
(Each number can be used more than once.)

$$x^2 + \boxed{7}x - 8 = (x + \boxed{8})(x - \boxed{1})$$



Place the numbers from 1 to 9 in the boxes below to make the statement true.  
(Each number can be used more than once.)

$$x^2 + \boxed{\phantom{00}}x - 8 = (x + \boxed{\phantom{00}})(x - \boxed{\phantom{00}})$$

1

2

3

4

5

6

7

8

9

Place numbers in the boxes below to make the statement true.

$$x^2 - x - \boxed{\phantom{00}} = (x + \boxed{\phantom{00}})(x - \boxed{\phantom{00}})$$

$$x^2 - x - \boxed{20} = (x + \boxed{4})(x - \boxed{5})$$

$$x^2 - x - 20 = (x + 4)(x - 5)$$

90	9	10
72	8	9
56	7	8
42	6	7
30	5	6
20	4	5
12	3	4
6	2	3
2	1	2

90

72

56

42

30

20

12

6

2

9

8

7

6

5

4

3

2

1

10

9

8

7

6

5

4

3

2

$$x^2 - x - 2 = (x + 1)(x - 2)$$

$$x^2 - x - \boxed{90} = (x + \boxed{9})(x - \boxed{10})$$

72

56

42

30

20

12

6

2

8

7

6

5

4

3

2

1

9

8

7

6

5

4

3

2



Place the numbers from 1 to 9 in the boxes below to make the statement true.

*(Each number can be used only once.)*

$$x^2 - \boxed{\phantom{000}}x - 8 = (x - \boxed{\phantom{000}})(x + \boxed{\phantom{000}})$$

$$x^2 + x - \boxed{\phantom{000}} = (x + \boxed{\phantom{000}})(x - \boxed{\phantom{000}})$$

$$x^2 - \boxed{\phantom{000}}x + 20 = (x - \boxed{\phantom{000}})(x - \boxed{\phantom{000}})$$

1

2

3

4

5

6

7

8

9

Place the numbers from 1 to 9 in the boxes below to make the statement true.

*(Each number can be used only once.)*

$$x^2 - \boxed{7}x - 8 = (x - \boxed{8})(x + \boxed{1})$$

$$x^2 + x - \boxed{6} = (x + \boxed{3})(x - \boxed{2})$$

$$x^2 - \boxed{9}x + 20 = (x - \boxed{4})(x - \boxed{5})$$

# Foundations of Mathematics & Pre-calculus 10

## Systems of Equations

Place the numbers from 1 to 9 in the boxes below to satisfy the condition.

*(Each number can be used only once.)*

$$\begin{array}{c} \boxed{x} + \boxed{y} = \boxed{\phantom{00}} \\ \boxed{x} + \boxed{y} = \boxed{\phantom{00}} \end{array}$$

no  
solution

1

2

3

4

5

6

7

8

9

Place the numbers from 1 to 9 in the boxes below to satisfy the condition.

*(Each number can be used only once.)*

$$\begin{array}{c} \boxed{\phantom{00}} x + \boxed{\phantom{00}} y = \boxed{\phantom{00}} \\ \boxed{\phantom{00}} x + \boxed{\phantom{00}} y = \boxed{\phantom{00}} \end{array}$$

infinitely  
many  
solutions

1 2 3 4 5 6 7 8 9

Place the numbers from 1 to 9 in the boxes below to satisfy the condition.

*(Each number can be used only once.)*

$$\begin{array}{ccccc} \square & x & + & \square & y = \square \\ \square & x & + & \square & y = \square \end{array}$$

one  
solution

1 2 3 4 5 6 7 8 9