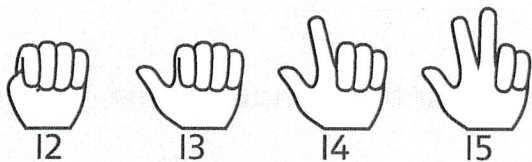


For students entering 3rd grade

OA3-I Counting On

Find the difference between 12 and 15 by counting on your fingers.



When you say 15, you have 3 fingers up.

So the **difference**, or **gap**, between 12 and 15 is 3.

1. Find the difference between the numbers.

a) 2 6

b) 3 8

c) 5 8

d) 4 5

e) 3 6

f) 3 4

g) 2 5

h) 4 7

i) 1 5

j) 7 10

k) 6 9

l) 3 9

m) 5 10

n) 2 8

o) 8 10

p) 2 7

q) 5 7

r) 4 8

s) 3 7

t) 1 6

2. Find the difference between the numbers.

a) 13 15

b) 17 19

c) 12 16

d) 15 19

e) 19 23

f) 16 20

g) 18 23

h) 17 22

BONUS ▶

i) 32 36

j) 47 51

k) 61 67

l) 68 72

m) 92 96

n) 98 101

o) 78 82

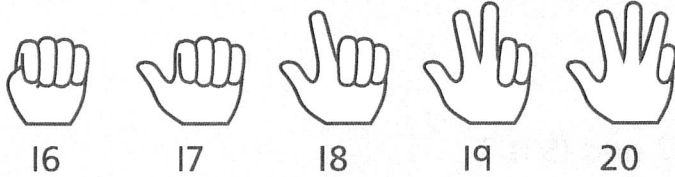
p) 96 100

OA3-2 Number Patterns Made by Adding

What number is 4 more than 16? Or, what is $16 + 4$?

Find the answer by counting on your fingers.

Say 16 with your fist closed. Then count on from 16 until you have raised 4 fingers.



The number 20 is 4 more than 16.

1. Add the number in the circle to the number beside it.

- a) 7 $\text{\textcircled{2}}$ _____ b) 9 $\text{\textcircled{3}}$ _____ c) 6 $\text{\textcircled{4}}$ _____ d) 17 $\text{\textcircled{3}}$ _____
e) 19 $\text{\textcircled{4}}$ _____ f) 13 $\text{\textcircled{8}}$ _____ g) 31 $\text{\textcircled{5}}$ _____ h) 27 $\text{\textcircled{9}}$ _____
i) 32 $\text{\textcircled{5}}$ _____ j) 42 $\text{\textcircled{7}}$ _____ k) 84 $\text{\textcircled{5}}$ _____ l) 62 $\text{\textcircled{3}}$ _____
m) 54 $\text{\textcircled{6}}$ _____ n) 63 $\text{\textcircled{5}}$ _____ o) 93 $\text{\textcircled{4}}$ _____ p) 87 $\text{\textcircled{5}}$ _____
q) 82 $\text{\textcircled{4}}$ _____ r) 94 $\text{\textcircled{3}}$ _____ s) 75 $\text{\textcircled{6}}$ _____ t) 97 $\text{\textcircled{2}}$ _____

2. Fill in the missing number.

- a) _____ is 3 more than 8. b) _____ is 3 more than 7.
c) _____ is 4 more than 6. d) _____ is 1 more than 8.
e) _____ is 5 more than 4. f) _____ is 5 more than 32.
g) _____ is 8 more than 37. h) _____ is 7 more than 54.

BONUS ►

- i) _____ is 8 more than 102. j) _____ is 5 more than 101.
k) _____ is 3 more than 99. l) _____ is 4 more than 103.

Continue the number pattern.

6 , 8 , 10 , 12 , _____

Step 1: Find the gap between the first two numbers.

6 $\overset{\textcircled{2}}$, 8 , 10 , 12 , _____

Step 2: Check that the gap between the other numbers is also 2.

6 $\overset{\textcircled{2}}$, 8 $\overset{\textcircled{2}}$, 10 $\overset{\textcircled{2}}$, 12 $\overset{\textcircled{2}}$, _____

Step 3: Add 2 to the last number.

6 , 8 , 10 , 12 , 14

3. Find the gap between the numbers. Then continue the number pattern.

a) 3 \bigcirc , 5 \bigcirc , 7 \bigcirc , _____ , _____

b) 0 \bigcirc , 3 \bigcirc , 6 \bigcirc , _____ , _____

c) 0 \bigcirc , 5 \bigcirc , 10 \bigcirc , _____ , _____

d) 4 \bigcirc , 8 \bigcirc , 12 \bigcirc , _____ , _____

e) 5 \bigcirc , 8 \bigcirc , 11 \bigcirc , _____ , _____

f) 3 \bigcirc , 7 \bigcirc , 11 \bigcirc , _____ , _____

g) 14 \bigcirc , 16 \bigcirc , 18 \bigcirc , _____ , _____

h) 11 \bigcirc , 13 \bigcirc , 15 \bigcirc , _____ , _____

BONUS ▶

i) 10 \bigcirc , 15 \bigcirc , 20 \bigcirc , _____ , _____ , _____ , _____ , _____

j) 21 \bigcirc , 23 \bigcirc , 25 \bigcirc , _____ , _____ , _____ , _____ , _____

4. Jane runs 14 blocks on Monday.
Each day she runs 2 blocks farther than the day before.
How far does she run on Wednesday?

14
Monday Tuesday Wednesday



OA3-3 Counting Backward

To get from 12 to 16, Ethan adds 4.

$$\begin{array}{r} \textcircled{+4} \\ 12 \quad 16 \end{array}$$

To get from 16 to 12, he subtracts 4.

$$\begin{array}{r} \textcircled{-4} \\ 16 \quad 12 \end{array}$$

1. Find the numbers to add or subtract.

a) $12 \textcircled{+2} 14$ and $14 \textcircled{-2} 12$

b) $11 \textcircled{\quad} 15$ and $15 \textcircled{\quad} 11$

c) $2 \textcircled{\quad} 5$ and $5 \textcircled{\quad} 2$

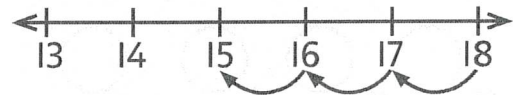
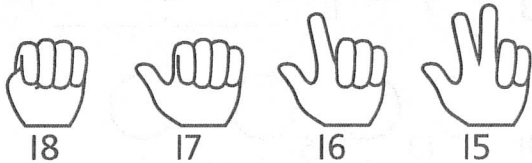
d) $10 \textcircled{\quad} 18$ and $18 \textcircled{\quad} 10$

e) $7 \textcircled{\quad} 14$ and $14 \textcircled{\quad} 7$

f) $9 \textcircled{\quad} 14$ and $14 \textcircled{\quad} 9$

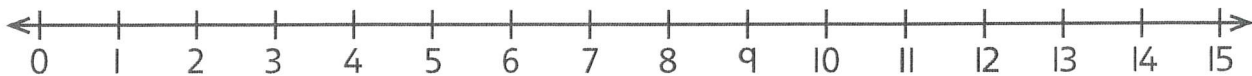
What number must you subtract from 18 to get 15?

Count backward on your fingers to find out. A number line can help you count.



You have 3 fingers up, so 3 subtracted from 18 is 15.

2. What number must you subtract?



a) $7 \textcircled{-3} 4$

b) $6 \textcircled{\quad} 3$

c) $9 \textcircled{\quad} 7$

d) $5 \textcircled{\quad} 1$

e) $8 \textcircled{\quad} 4$

f) $10 \textcircled{\quad} 5$

g) $15 \textcircled{\quad} 11$

h) $13 \textcircled{\quad} 9$

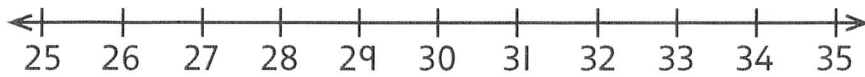
i) $14 \textcircled{\quad} 7$

j) $15 \textcircled{\quad} 10$

k) $14 \textcircled{\quad} 8$

l) $12 \textcircled{\quad} 9$

3. Find the gap between the numbers.



a) $32 \text{ } \textcircled{-4} \text{ } 28$

b) $30 \text{ } \textcircled{\quad} \text{ } 29$

c) $32 \text{ } \textcircled{\quad} \text{ } 27$

d) $30 \text{ } \textcircled{\quad} \text{ } 26$

e) $28 \text{ } \textcircled{\quad} \text{ } 25$

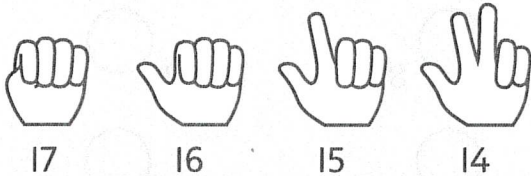
f) $33 \text{ } \textcircled{\quad} \text{ } 26$

g) $29 \text{ } \textcircled{\quad} \text{ } 26$

h) $31 \text{ } \textcircled{\quad} \text{ } 25$

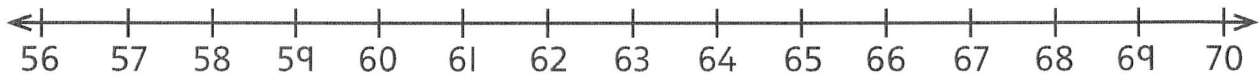
What number do you subtract from 17 to get 14? $17 - \square = 14$

Count backward to find out.



You have 3 fingers up, so $17 - \boxed{3} = 14$.

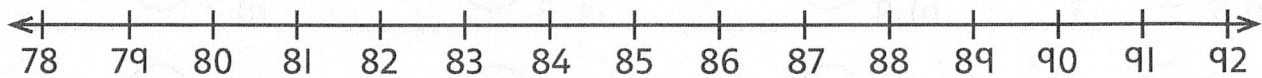
4. Find the missing number.



a) $63 - \boxed{4} = 59$ b) $67 - \boxed{\quad} = 62$ c) $64 - \boxed{\quad} = 60$ d) $64 - \boxed{\quad} = 59$

e) $66 - \boxed{\quad} = 56$ f) $69 - \boxed{\quad} = 61$ g) $70 - \boxed{\quad} = 60$ h) $65 - \boxed{\quad} = 62$

$86 - 4$ is 82, so 82 is 4 less than 86.



5. Find the missing number.

a) 81 is 6 less than 87.

b) 83 is _____ less than 92.

c) 83 is _____ less than 88.

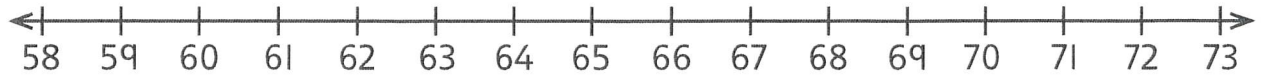
d) 79 is _____ less than 82.

e) 84 is _____ less than 92.

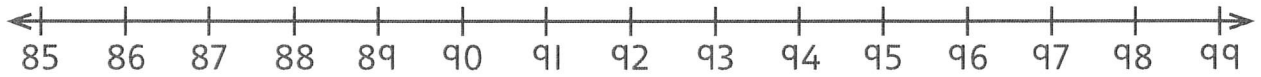
f) 78 is _____ less than 87.

OA3-4 Number Patterns Made by Subtracting

1. Find the gap between the numbers.



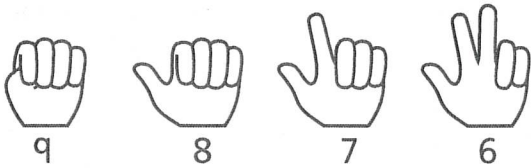
- a) 66 $\text{\textcircled{-5}}$ 61 b) 69 $\text{\textcircled{\quad}}$ 67 c) 60 $\text{\textcircled{\quad}}$ 58 d) 68 $\text{\textcircled{\quad}}$ 61
 e) 81 $\text{\textcircled{\quad}}$ 79 f) 70 $\text{\textcircled{\quad}}$ 67 g) 72 $\text{\textcircled{\quad}}$ 68 h) 61 $\text{\textcircled{\quad}}$ 58



- i) 93 $\text{\textcircled{\quad}}$ 88 j) 91 $\text{\textcircled{\quad}}$ 85 k) 93 $\text{\textcircled{\quad}}$ 89 l) 97 $\text{\textcircled{\quad}}$ 94
 m) 91 $\text{\textcircled{\quad}}$ 87 n) 98 $\text{\textcircled{\quad}}$ 89 o) 96 $\text{\textcircled{\quad}}$ 86 p) 95 $\text{\textcircled{\quad}}$ 92

What number is 3 **less than** 9? Or, what is $9 - 3$?

Kathy finds the answer by counting backward on her fingers.



Kathy has 3 fingers up. The number 6 is 3 less than 9. So $9 - 3 = 6$.

2. Subtract.

- a) 5 $\text{\textcircled{-2}}$ 3 b) 9 $\text{\textcircled{-3}}$ c) 8 $\text{\textcircled{-4}}$ d) 7 $\text{\textcircled{-1}}$
 e) 7 $\text{\textcircled{-5}}$ f) 6 $\text{\textcircled{-4}}$ g) 3 $\text{\textcircled{-1}}$ h) 11 $\text{\textcircled{-2}}$
 i) 10 $\text{\textcircled{-6}}$ j) 13 $\text{\textcircled{-2}}$ k) 19 $\text{\textcircled{-4}}$ l) 18 $\text{\textcircled{-3}}$
 m) 36 $\text{\textcircled{-2}}$ n) 47 $\text{\textcircled{-4}}$ o) 59 $\text{\textcircled{-3}}$ p) 76 $\text{\textcircled{-5}}$

3. Find the missing number.

a) _____ is 2 less than 6.

b) _____ is 2 less than 8.

c) _____ is 3 less than 8.

d) _____ is 5 less than 17.

e) _____ is 4 less than 20.

f) _____ is 6 less than 20.

g) _____ is 7 less than 28.

h) _____ is 4 less than 32.

i) _____ is 5 less than 40.

j) _____ is 4 less than 57.

In a number pattern made by subtracting, each number is less than the one before it.

Extend the number pattern:

11, 9, 7

Step 1: Find the gap.

11, 9, 7, _____, _____

Step 2: Extend the number pattern.

11, 9, 7, 5, 3

4. Extend the number pattern by subtracting.

a) 10, 9, 8, _____, _____

b) 14, 12, 10, _____, _____

c) 23, 22, 21, _____, _____

d) 24, 21, 18, _____, _____

e) 90, 80, 70, _____, _____

f) 45, 40, 35, _____, _____

5. Ben has 10 apples on Thursday.

He eats 2 each day.

How many apples does he have on Saturday?

10
Thursday

Friday

Saturday



OA3-5 Number Patterns Made by Adding or Subtracting

1. Extend the number pattern using the gap.

a) 6 $\textcircled{+1}$ 7 , 8 , 9

b) 8 $\textcircled{-2}$ 6 , 4 , 2

c) 5 $\textcircled{+5}$ 10 , _____ , _____

d) 2 $\textcircled{+3}$ 5 , _____ , _____

e) 3 $\textcircled{+3}$ 6 , _____ , _____

f) 8 $\textcircled{+2}$ 10 , _____ , _____

g) 14 $\textcircled{+2}$ 16 , _____ , _____

h) 18 $\textcircled{-2}$ 16 , _____ , _____

i) 25 $\textcircled{-5}$ 20 , _____ , _____

j) 9 $\textcircled{-2}$ 7 , _____ , _____

k) 22 $\textcircled{-3}$ 19 , _____ , _____

l) 15 $\textcircled{+5}$ 20 , _____ , _____

m) 13 $\textcircled{-1}$ 12 , _____ , _____

n) 17 $\textcircled{-4}$ 13 , _____ , _____

o) 29 $\textcircled{-5}$ 24 , _____ , _____

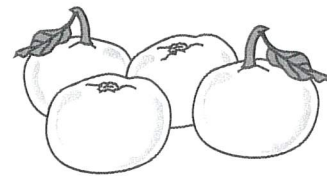
p) 32 $\textcircled{+5}$ 37 , _____ , _____

q) 41 $\textcircled{+4}$ 45 , _____ , _____

r) 46 $\textcircled{-3}$ 43 , _____ , _____

2. Rani has a box of 24 tangerines.
She eats 3 tangerines each day for 4 days.
How many are left?

24 $\textcircled{\quad}$ _____ , _____ , _____ , _____
Day 1 Day 2 Day 3 Day 4



OA3-6 Number Patterns and Rules

1. Extend the number pattern by adding.

- a) Add 3. 30, 33, 36, 39, 42 b) Add 4. 60, 64, _____, _____, _____
c) Add 2. 26, 28, _____, _____, _____ d) Add 3. 20, 23, _____, _____, _____
e) Add 3. 12, 15, _____, _____, _____ f) Add 5. 46, 51, _____, _____, _____
g) Add 4. 83, 87, _____, _____, _____ h) Add 5. 74, 79, _____, _____, _____
i) Add 3. 76, 79, _____, _____, _____ j) Add 5. 80, 85, _____, _____, _____
k) Add 4. 62, 66, _____, _____, _____ l) Add 2. 89, 91, _____, _____, _____

2. Extend the number pattern by subtracting.

- a) Subtract 2. 12, 10, _____, _____ b) Subtract 3. 40, 37, _____, _____
c) Subtract 4. 55, 51, _____, _____ d) Subtract 3. 63, 60, _____, _____
e) Subtract 2. 88, 86, _____, _____ f) Subtract 5. 79, 74, _____, _____
g) Subtract 4. 30, 26, _____, _____ h) Subtract 4. 66, 62, _____, _____
i) Subtract 3. 87, 84, _____, _____ j) Subtract 5. 100, 95, _____, _____
k) Subtract 5. 74, 69, _____, _____ l) Subtract 3. 98, 95, _____, _____

BONUS ► Circle the number patterns made by adding 3.

Hint: Check the gap between each pair of numbers.

- A. 3, 7, 9, 11 B. 3, 6, 9, 11 C. 3, 6, 9, 12
D. 19, 22, 25, 28 E. 15, 18, 21, 24 F. 18, 21, 24, 29

3. Look at the number pattern 2, 6, 10, 14, 18.

Andy says the pattern was made by adding 4 each time.

Is he correct? Explain how you know.

4. What number do you add to make the number pattern?

- | | | | |
|-----------------------|------------|-------------------|------------|
| a) 2, 4, 6, 8 | Add _____. | b) 3, 6, 9, 12 | Add _____. |
| c) 15, 18, 21, 24 | Add _____. | d) 42, 44, 46, 48 | Add _____. |
| e) 41, 46, 51, 56 | Add _____. | f) 19, 23, 27, 31 | Add _____. |
| g) 243, 245, 247, 249 | Add _____. | h) 21, 27, 33, 39 | Add _____. |

5. What number do you subtract to make the number pattern?

- | | | | |
|--------------------|-----------------|-------------------|-----------------|
| a) 16, 14, 12, 10 | Subtract _____. | b) 30, 25, 20, 15 | Subtract _____. |
| c) 100, 99, 98, 97 | Subtract _____. | d) 42, 39, 36, 33 | Subtract _____. |
| e) 17, 14, 11, 8 | Subtract _____. | f) 99, 97, 95, 93 | Subtract _____. |

6. Write the number to add or subtract.

- | | | | |
|--------------------------|---------------------|-------------------------|--------|
| a) 117, 110, 103, 96, 89 | <u>Subtract 7</u> . | b) 1, 9, 17, 25, 33, 41 | _____. |
| c) 101, 105, 109, 113 | _____. | d) 99, 88, 77, 66 | _____. |

7. Find the rule for the number pattern. Then extend the number pattern.

13, 18, 23, _____, _____, _____ The rule is: Start at _____ and add _____.

8. Look at the number pattern 5, 8, 11, 14, 17.

Will's Rule

Start at 5. Subtract 3 each time.

Amy's Rule

Start at 4. Add 3 each time.

Jayden's Rule

Start at 5. Add 3 each time.

- a) Whose pattern rule is correct?
b) What mistakes did the others make? Explain.

OA3-7 T-tables

Nina saved 10 dollars in January.
 She saves 5 dollars every month after that.
 Nina uses a **T-table** to keep track of her money.
 She writes a rule for the table:
 Start at 10 and add 5 each time.

Month	Dollars Saved
January	10
February	15
March	20

Nina writes the number of dollars saved each month.

I. Write the gaps in the circles. Then write the rule for the pattern.

a)

Month	Dollars Saved
January	4
February	7
March	10
April	13

Rule: Start at _____ and add _____.

b)

Month	Dollars Saved
January	2
February	5
March	8
April	11

Rule: Start at _____ and add _____.

c)

Month	Dollars Saved
January	3
February	5
March	7
April	9

Rule: Start at _____ and add _____.

d)

Month	Dollars Saved
January	2
February	6
March	10
April	14

Rule: Start at _____ and add _____.

e)

Month	Dollars Saved
March	4
April	6
May	8
June	10

Rule: Start at _____ and add _____.

f)

Month	Dollars Saved
May	1
June	5
July	9
August	13

Rule: Start at _____ and add _____.

2. Complete the table.

a)

Month	Dollars Saved
January	2
February	5
March	8
April	
May	
June	

b)

Month	Dollars Saved
February	6
March	9
April	12
May	
June	
July	

c)

Month	Dollars Saved
July	1
August	6
September	11
October	
November	
December	

d)

Month	Dollars Saved
August	4
September	9
October	14
November	
December	
January	

3. How many young would 4 animals have? Complete the table to find out.

a)

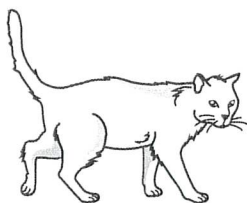
Number of Cats	Number of Kittens
1	6
2	12
3	
4	

b)

Number of Foxes	Number of Kits
1	4
2	8
3	
4	

c)

Number of Bears	Number of Cubs
1	2
2	4
3	
4	



4. How much money would Beth earn for 4 hours of work? Complete the table to find out.

a)

Hours Worked	Dollars Earned
1	7

b)

Hours Worked	Dollars Earned
1	8

c)

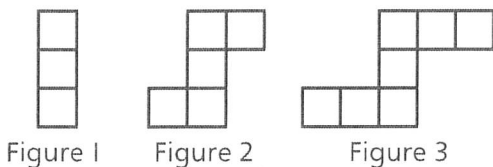
Hours Worked	Dollars Earned
1	6

5. It costs 5 dollars to rent a canoe for the first hour. It costs 4 dollars for each hour after that.

- a) How much does it cost to rent a canoe for 4 hours? _____
- b) Carl has 20 dollars. Can he rent the canoe for 5 hours? _____

Hours	Dollars Paid
1	
2	
3	

6. Marta makes figures with squares.



- a) Complete the T-table to show how many squares Marta uses for each figure.
- b) Marta has 12 squares. Can she make Figure 5 in this pattern? Explain.

Figure	Number of Squares
1	3
2	
3	

7. Marco saves 6 dollars each month.

- a) How much will he save in 3 months?
- b) How many months will it take to save 30 dollars?