

Arithmetic Patterns

Fill in the addition table. Then look for patterns.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5		7	8	9
1	1	2	3	4	5	6	7		9	10
2	2	3	4	5		7	8		10	11
3	3	4	5	6	7	8	9	10	11	
4	4		6	7	8	9	10	11	12	13
5	5	6						12	13	14
6	6	7						13	14	15
7	7	8						14	15	16
8	8	9						15	16	17
9		10	11	12	13	14	15	16		18

1. Fill in the empty squares.

2. Shade every sum of 9.

One is done for you. **Example**

3. Look along the 6 row. Each sum is _____ more than the sum before it.

4. Look down the 3 column. Each sum is _____ more than the sum above it.

5. The squares you shaded make a line from the bottom left to the top right. Why is every sum 9?

6. The doubles $0 + 0$, $1 + 1$, $2 + 2$ and on make a line from the top left to the bottom right.

Each double is _____ more than the last.

They are all **odd** **even**

7. Find $2 + 9$ and $9 + 2$ in the table. $2 + 9 =$ _____ and $9 + 2 =$ _____. The table is the same on both sides of the doubles. Why?

Arithmetic Patterns

Add. Find the pattern in odd and even sums.

1. Add. Are the sums in each box odd or even? Circle.

even + even Example	odd + odd	one odd, one even
$6 + 8 = 14$ $24 + 12 = 36$ $30 + 46 = 76$ odd <u>even</u>	$7 + 9 = \underline{\hspace{2cm}}$ $13 + 5 = \underline{\hspace{2cm}}$ $25 + 31 = \underline{\hspace{2cm}}$ odd even	$9 + 4 = \underline{\hspace{2cm}}$ $16 + 23 = \underline{\hspace{2cm}}$ $8 + 27 = \underline{\hspace{2cm}}$ odd even

2. Why is odd + odd even? Look at $7 + 5$.

 $+$ 	Each odd number has one dot with no partner. Circle the dot left over in 7 and in 5. Can the two dots left over make a pair? Yes No $7 + 5 = \underline{\hspace{2cm}}$, an even number.
7 5	

3. Predict: circle odd or even. Then add to check. Example

$37 + 25 = 62$ odd <u>even</u>	$46 + 28 = \underline{\hspace{2cm}}$ odd even
$53 + 34 = \underline{\hspace{2cm}}$ odd even	$64 + 19 = \underline{\hspace{2cm}}$ odd even
$125 + 243 = \underline{\hspace{2cm}}$ odd even	$316 + 452 = \underline{\hspace{2cm}}$ odd even
$207 + 384 = \underline{\hspace{2cm}}$ odd even	$438 + 179 = \underline{\hspace{2cm}}$ odd even

Arithmetic Patterns

Shade the odd products. Find the pattern.

×	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12		16	18
3	3	6	9		15	18		24	27
4	4	8	12	16	20	24	28	32	
5	5	10		20	25	30	35	40	
6	6	12	18	24	30		42	48	54
7	7		21	28	35	42	49		63
8	8	16	24	32		48	56	64	72
9	9	18		36	45	54	63	72	

1. Fill in the empty squares.

2. Shade every odd product.

One is done for you. **Example**

3. Circle odd or even.

odd × odd is odd even

even × odd is odd even

even × even is odd even

4. Any number × an even number is

odd even

5. Predict: circle odd or even. Then multiply to check. **Example**

$5 \times 9 = 45$ **odd** even

$8 \times 3 =$ odd even

$9 \times 7 =$ odd even

$4 \times 8 =$ odd even

$3 \times 5 =$ odd even

$10 \times 7 =$ odd even

6. Split the even number in half. Each product is a double, so it is even.

$6 \times 7 = 3 \times 7 + 3 \times 7 = 21 + 21 = 42$ **Example**

$8 \times 5 = 4 \times 5 + 4 \times 5 =$ + =

$10 \times 3 = 5 \times 3 + 5 \times 3 =$ + =

Arithmetic Patterns

Write the multiples. Find the pattern in the digits.

1. Multiples of 5

Example

5	10	15	20	25
30	35	40	45	50

The ones digit is always 0 or 5.

$5 \times 7 =$ 35 ends in 5.

2. Multiples of 10

10		30		
60				

The ones digit is always ____.

10×6 is ____ tens: ____.

3. Multiples of 4

4	8			
24				

Every multiple of 4 is odd even

Ones digits repeat: 4, 8, ____, ____, 0

4. Multiples of 9

9		27		

Add the digits of 27: $2 + 7 =$ ____.

The digits of each one add up to ____.

5. Use the patterns and your facts. Circle the multiples.

Multiples of 5:

35

42

20

45

23

15

48

Example

Multiples of 10:

70

15

40

65

100

90

55

Multiples of 4:

16

22

28

31

36

18

12

Multiples of 9:

54

64

27

45

38

72

81

Arithmetic Patterns

Find who is right. Then use a pattern to fill in the blanks.

Who is right? Circle the animal. Then show how you know.

1.



4×6 is double 2×6 .



4×6 is 2 more than 2×6 .

Show how you know.

$$2 \times 6 = 12$$

Double 12 is $12 + 12 = 24$.

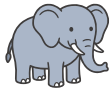
$$\text{And } 4 \times 6 = 24.$$

Example

2.



An odd number plus an odd number is always odd.



An odd number plus an odd number is always even.

Show how you know.

3.



The 3 row and the 3 column of the times table have the same numbers.



The 3 row has bigger numbers than the 3 column.

Show how you know.

4. Use a pattern. Fill in the blank.

Example

$$3 \times 6 = 18, \text{ so } 6 \times 6 = \underline{36}$$

$$7 \times 4 = 28, \text{ so } 4 \times 7 = \underline{\quad}$$

$$5 \times 4 = 20, \text{ so } 10 \times 4 = \underline{\quad}$$

$$5 + 8 = 13, \text{ so } 6 + 7 = \underline{\quad}$$

$$9 \times 6 = 54, \text{ so } 6 \times 9 = \underline{\quad}$$

$$4 \times 9 = 36, \text{ so } 8 \times 9 = \underline{\quad}$$

Arithmetic Patterns

Fill in the addition table. Then look for patterns.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5		7	8	9
1	1	2	3	4	5	6	7		9	10
2	2	3	4	5		7	8		10	11
3	3	4	5	6	7	8	9	10	11	
4	4		6	7	8	9	10	11	12	13
5	5	6						12	13	14
6	6	7						13	14	15
7	7	8						14	15	16
8	8	9						15	16	17
9		10	11	12	13	14	15	16		18

1. Fill in the empty squares.

2. Shade every sum of 9.

One is done for you. **Example**

3. Look along the 6 row. Each sum is _____ more than the sum before it.

4. Look down the 3 column. Each sum is _____ more than the sum above it.

5. The squares you shaded make a line from the bottom left to the top right. Why is every sum 9?

6. The doubles $0 + 0$, $1 + 1$, $2 + 2$ and on make a line from the top left to the bottom right.

Each double is _____ more than the last.

They are all **odd** **even**

7. Find $2 + 9$ and $9 + 2$ in the table. $2 + 9 =$ _____ and $9 + 2 =$ _____.

The table is the same on both sides of the doubles. Why?

Arithmetic Patterns

Add. Find the pattern in odd and even sums.

1. Add. Are the sums in each box odd or even? Circle.

even + even Example	odd + odd	one odd, one even
$6 + 8 = \underline{14}$	$7 + 9 = \underline{\quad}$	$9 + 4 = \underline{\quad}$
$24 + 12 = \underline{36}$	$13 + 5 = \underline{\quad}$	$16 + 23 = \underline{\quad}$
$30 + 46 = \underline{76}$	$25 + 31 = \underline{\quad}$	$8 + 27 = \underline{\quad}$
odd even	odd even	odd even

2. Why is odd + odd even? Look at $7 + 5$.

 $+$ 	Each odd number has one dot with no partner. Circle the dot left over in 7 and in 5. Can the two dots left over make a pair? Yes No $7 + 5 = \underline{\quad}$, an even number.
7 5	

3. Predict: circle odd or even. Then add to check. Example

$37 + 25 = \underline{62}$ odd even	$46 + 28 = \underline{\quad}$ odd even
$53 + 34 = \underline{\quad}$ odd even	$64 + 19 = \underline{\quad}$ odd even
$125 + 243 = \underline{\quad}$ odd even	$316 + 452 = \underline{\quad}$ odd even
$207 + 384 = \underline{\quad}$ odd even	$438 + 179 = \underline{\quad}$ odd even

Arithmetic Patterns

Shade the odd products. Find the pattern.

×	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12		16	18
3	3	6	9		15	18		24	27
4	4	8	12	16	20	24	28	32	
5	5	10		20	25	30	35	40	
6	6	12	18	24	30		42	48	54
7	7		21	28	35	42	49		63
8	8	16	24	32		48	56	64	72
9	9	18		36	45	54	63	72	

1. Fill in the empty squares.

2. Shade every odd product.

One is done for you. **Example**

3. Circle odd or even.

odd × odd is odd even

even × odd is odd even

even × even is odd even

4. Any number × an even number is

odd even

5. Predict: circle odd or even. Then multiply to check. **Example**

$5 \times 9 = 45$ **odd** even

$8 \times 3 =$ odd even

$9 \times 7 =$ odd even

$4 \times 8 =$ odd even

$3 \times 5 =$ odd even

$10 \times 7 =$ odd even

6. Split the even number in half. Each product is a double, so it is even.

$6 \times 7 = 3 \times 7 + 3 \times 7 = 21 + 21 = 42$ **Example**

$8 \times 5 = 4 \times 5 + 4 \times 5 =$ + =

$10 \times 3 = 5 \times 3 + 5 \times 3 =$ + =

Arithmetic Patterns

Write the multiples. Find the pattern in the digits.

1. Multiples of 5

Example

5	10	15	20	25
30	35	40	45	50

The ones digit is always 0 or 5.

$5 \times 7 =$ 35 ends in 5.

2. Multiples of 10

10		30		
60				

The ones digit is always ____.

10×6 is ____ tens: ____.

3. Multiples of 4

4	8			
24				

Every multiple of 4 is odd even

Ones digits repeat: 4, 8, ____, ____, 0

4. Multiples of 9

9		27		

Add the digits of 27: $2 + 7 =$ ____.

The digits of each one add up to ____.

5. Use the patterns and your facts. Circle the multiples.

Multiples of 5:

35

42

20

45

23

15

48

Example

Multiples of 10:

70

15

40

65

100

90

55

Multiples of 4:

16

22

28

31

36

18

12

Multiples of 9:

54

64

27

45

38

72

81

Arithmetic Patterns

Find who is right. Then use a pattern to fill in the blanks.

Who is right? Circle the animal. Then show how you know.

1.



4×6 is double 2×6 .



4×6 is 2 more than 2×6 .

Show how you know.

$$2 \times 6 = 12$$

Double 12 is $12 + 12 = 24$.

$$\text{And } 4 \times 6 = 24.$$

Example

2.



An odd number plus an odd number is always odd.



An odd number plus an odd number is always even.

Show how you know.

3.



The 3 row and the 3 column of the times table have the same numbers.



The 3 row has bigger numbers than the 3 column.

Show how you know.

4. Use a pattern. Fill in the blank.

Example

$$3 \times 6 = 18, \text{ so } 6 \times 6 = \underline{36}$$

$$7 \times 4 = 28, \text{ so } 4 \times 7 = \underline{\quad}$$

$$5 \times 4 = 20, \text{ so } 10 \times 4 = \underline{\quad}$$

$$5 + 8 = 13, \text{ so } 6 + 7 = \underline{\quad}$$

$$9 \times 6 = 54, \text{ so } 6 \times 9 = \underline{\quad}$$

$$4 \times 9 = 36, \text{ so } 8 \times 9 = \underline{\quad}$$

Arithmetic Patterns

Fill in the addition table. Then look for patterns.

+	0	1	2	3	4	5	6	7	8	9
0	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
2	2	3	4	5	6	7	8	9	10	11
3	3	4	5	6	7	8	9	10	11	12
4	4	5	6	7	8	9	10	11	12	13
5	5	6	7	8	9	10	11	12	13	14
6	6	7	8	9	10	11	12	13	14	15
7	7	8	9	10	11	12	13	14	15	16
8	8	9	10	11	12	13	14	15	16	17
9	9	10	11	12	13	14	15	16	17	18

1. Fill in the empty squares.
2. Shade every sum of 9.
One is done for you. **Example**
3. Look along the 6 row. Each sum is 1 more than the sum before it.
4. Look down the 3 column. Each sum is 1 more than the sum above it.

5. The squares you shaded make a line from the bottom left to the top right.
Why is every sum 9?

Going up one row, the first number is 1 less. Going right one column,
the second number is 1 more. So the sum stays the same.

6. The doubles $0 + 0$, $1 + 1$, $2 + 2$ and on make a line from the top left to the bottom right.

Each double is 2 more than the last.

They are all odd **even**

7. Find $2 + 9$ and $9 + 2$ in the table. $2 + 9 = \underline{11}$ and $9 + 2 = \underline{11}$.
The table is the same on both sides of the doubles. Why?

You can add two numbers in any order: $2 + 9$ and $9 + 2$ are both 11.

Arithmetic Patterns

Add. Find the pattern in odd and even sums.

1. Add. Are the sums in each box odd or even? Circle.

even + even Example	odd + odd	one odd, one even
$6 + 8 = 14$	$7 + 9 = 16$	$9 + 4 = 13$
$24 + 12 = 36$	$13 + 5 = 18$	$16 + 23 = 39$
$30 + 46 = 76$	$25 + 31 = 56$	$8 + 27 = 35$
odd <u>even</u>	odd <u>even</u>	<u>odd</u> even

2. Why is odd + odd even? Look at $7 + 5$.



7

+



5

Each odd number has one dot with no partner.
Circle the dot left over in 7 and in 5.

Can the two dots left over make a pair?

Yes No $7 + 5 = 12$, an even number.

3. Predict: circle odd or even. Then add to check. Example

$37 + 25 = 62$ odd <u>even</u>	$46 + 28 = 74$ odd <u>even</u>
$53 + 34 = 87$ <u>odd</u> even	$64 + 19 = 83$ <u>odd</u> even
$125 + 243 = 368$ odd <u>even</u>	$316 + 452 = 768$ odd <u>even</u>
$207 + 384 = 591$ <u>odd</u> even	$438 + 179 = 617$ <u>odd</u> even

Arithmetic Patterns

Shade the odd products. Find the pattern.

×	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	49	56	63
8	8	16	24	32	40	48	56	64	72
9	9	18	27	36	45	54	63	72	81

1. Fill in the empty squares.

2. Shade every odd product.

One is done for you. **Example**

3. Circle odd or even.

odd × odd is **odd** even

even × odd is odd **even**

even × even is odd **even**

4. Any number × an even number is

odd **even**

5. Predict: circle odd or even. Then multiply to check. **Example**

$$5 \times 9 = \underline{45} \quad \text{odd} \quad \text{even}$$

$$8 \times 3 = \underline{24} \quad \text{odd} \quad \text{even}$$

$$9 \times 7 = \underline{63} \quad \text{odd} \quad \text{even}$$

$$4 \times 8 = \underline{32} \quad \text{odd} \quad \text{even}$$

$$3 \times 5 = \underline{15} \quad \text{odd} \quad \text{even}$$

$$10 \times 7 = \underline{70} \quad \text{odd} \quad \text{even}$$

6. Split the even number in half. Each product is a double, so it is even.

$$6 \times 7 = 3 \times 7 + 3 \times 7 = \underline{21} + \underline{21} = \underline{42} \quad \text{Example}$$

$$8 \times 5 = 4 \times 5 + 4 \times 5 = \underline{20} + \underline{20} = \underline{40}$$

$$10 \times 3 = 5 \times 3 + 5 \times 3 = \underline{15} + \underline{15} = \underline{30}$$

Arithmetic Patterns

Write the multiples. Find the pattern in the digits.

1. Multiples of 5

Example

5	10	15	20	25
30	35	40	45	50

The ones digit is always 0 or 5.

$5 \times 7 =$ 35 ends in 5.

2. Multiples of 10

10	20	30	40	50
60	70	80	90	100

The ones digit is always 0.

10×6 is 6 tens: 60.

3. Multiples of 4

4	8	12	16	20
24	28	32	36	40

Every multiple of 4 is odd even

Ones digits repeat: 4, 8, 2, 6, 0

4. Multiples of 9

9	18	27	36	45
54	63	72	81	90

Add the digits of 27: $2 + 7 =$ 9.

The digits of each one add up to 9.

5. Use the patterns and your facts. Circle the multiples.

Multiples of 5:

35 42 20 45 23 15 48

Example

Multiples of 10:

70 15 40 65 100 90 55

Multiples of 4:

16 22 28 31 36 18 12

Multiples of 9:

54 64 27 45 38 72 81

Arithmetic Patterns

Find who is right. Then use a pattern to fill in the blanks.

Who is right? Circle the animal. Then show how you know.

1.



4×6 is double 2×6 .



4×6 is 2 more than 2×6 .

Show how you know.

$$2 \times 6 = 12$$

Double 12 is $12 + 12 = 24$.

$$\text{And } 4 \times 6 = 24.$$

Example

2.



An odd number plus an odd number is always odd.



An odd number plus an odd number is always even.

Show how you know.

$$9 + 3 = 12$$

$$11 + 5 = 16$$

The two left over make a pair, so it is even.

3.



The 3 row and the 3 column of the times table have the same numbers.



The 3 row has bigger numbers than the 3 column.

Show how you know.

$$3 \times 7 = 21$$

$$7 \times 3 = 21$$

Turn-around facts are equal.

4. Use a pattern. Fill in the blank.

Example

$$3 \times 6 = 18, \text{ so } 6 \times 6 = \underline{36}$$

$$7 \times 4 = 28, \text{ so } 4 \times 7 = \underline{28}$$

$$5 \times 4 = 20, \text{ so } 10 \times 4 = \underline{40}$$

$$5 + 8 = 13, \text{ so } 6 + 7 = \underline{13}$$

$$9 \times 6 = 54, \text{ so } 6 \times 9 = \underline{54}$$

$$4 \times 9 = 36, \text{ so } 8 \times 9 = \underline{72}$$