Associative Law of Multiplication

Aim: To solve multiplication problems involving the 3, 4 and 8 multiplication tables using the associative law.

The associative law of multiplication explains that the answer to a multiplication calculation will be the same no matter how the numbers are grouped, or in which order these groups are multiplied.

$(4 \times 8) \times 3$ is the same as $4 \times (8 \times 3)$ is the same as $(4 \times 3) \times 8$

1. Solve and match up these calculations:

(6 × 3) × 2=	4 × (8 × 10) =
(7 × 4) × 5 =	(3 × 2) × 3 =
(4 × 8) × 10 =	(3 × 2) × 6 =
(3 × 3) × 2 =	6 × (4 × 5) =
(6 × 4) × 5 =	(7 × 5) × 4 =

We can use the associative law to help us solve multiplication problems involving larger numbers.

For example: 15 × 8 can become (3 × 5) × 8

We can then regroup the numbers in the multiplication into the simplest calculation to solve:

(5 × 8) × 3 =
40 × 3 = 120

2. Use the associative law to solve these calculations.

a) 16 × 8 = (2 × 8) × 8 (8 × 8) × 2 64 × 2 = 128	b) 18 × 4 =	c) 20 × 3
d) 21 × 8	e) 24 × 4	f) 27 × 3
g) 28 × 3 =	h) 15 × 4 =	i) 12 × 8 =

Associative Law of Multiplication

Aim: To solve multiplication problems involving the 6, 7 and 8 multiplication tables using associative law.

The associative law of multiplication explains that the answer to a multiplication calculation will be the same no matter how the numbers are grouped, or in which order these groups are multiplied.

$(6 \times 7) \times 8$ is the same as $6 \times (7 \times 8)$ is the same as $(6 \times 8) \times 7$

1. Solve and match up these calculations:

$(6 \times 6) \times 2 =$	$4 \times (8 \times 10) =$
$(7 \times 7) \times 3 =$	$(3 \times 2) \times 7 =$
$(4 \times 8) \times 10 =$	$(6 \times 2) \times 6 =$
$(3 \times 7) \times 2 =$	$6 \times (6 \times 3) =$
$(6 \times 6) \times 3 =$	$(7 \times 3) \times 7 =$

We can use the associative law to help us solve multiplication problems involving larger numbers.

For example: 15×7 can become $(3 \times 5) \times 7$

We can then regroup the numbers in the multiplication into the simplest calculation to solve:

$(5 \times 7) \times 3 =$

$35 \times 3 = 105$

2. Use the associative law to solve these calculations.

a) $16 \times 7 =$ $(2 \times 8) \times 7$ $(7 \times 8) \times 2$ $56 \times 2 = 128$	b) $18 \times 6 =$	c) 20×8
d) 21×7	e) 24×6	f) 27×8
g) $28 \times 7 =$	h) $15 \times 6 =$	i) $12 \times 8 =$

Associative Law of Multiplication

Aim: To solve multiplication problems involving the 9, 11 and 12 multiplication tables using associative law.

The associative law of multiplication explains that the answer to a multiplication calculation will be the same no matter how the numbers are grouped, or in which order these groups are multiplied.

$(9 \times 12) \times 11$ is the same as $9 \times (12 \times 11)$ is the same as $(9 \times 11) \times 12$

1. Solve and match up these calculations:

(6 × 9) × 2 =	4 × (12 × 10) =
(7 × 11) × 3 =	(3 × 2) × 9 =
(4 × 12) × 10 =	(6 × 2) × 9 =
(3 × 9) × 2 =	6 × (11 × 3) =
(6 × 11) × 3 =	(7 × 3) × 11 =

We can use the associative law to help us solve multiplication problems involving larger numbers. For example: 15 × 9 can become (3 × 5) × 9

We can then regroup the numbers in the multiplication into the simplest calculation to solve: (5 × 9) × 3 =

45 × 3 = 135

2. Use the associative law to solve these calculations.

a) 16 × 9 =	b) 18 × 9 =	c) 20 × 9
d) 21 × 9	e) 24 × 9	f) 27 × 9
g) 28 × 9 =	h) 32 × 9 =	i) 35 × 9 =

Associative Law of Multiplication **Answers**

Aim: To solve multiplication problems involving the 3, 4 and 8 multiplication tables using the associative law.

The associative law of multiplication explains that the answer to a multiplication calculation will be the same no matter how the numbers are grouped, or in which order these groups are multiplied.

$(4 \times 8) \times 3$ is the same as $4 \times (8 \times 3)$ is the same as $(4 \times 3) \times 8$

1. Solve and match up these calculations:

(6 × 3) × 2= **36**	4 × (8 × 10) = **320**
(7 × 4) × 5 = **140**	(3 × 2) × 3 = **18**
(4 × 8) × 10 = **320**	(3 × 2) × 6 = **36**
(3 × 3) × 2 = **18**	6 × (4 × 5) = **120**
(6 × 4) × 5 = **120**	(7 × 5) × 4 = **140**

We can use the associative law to help us solve multiplication problems involving larger numbers.

For example: 15 × 8 can become (3 × 5) × 8

We can then regroup the numbers in the multiplication into the simplest calculation to solve:

(5 × 8) × 3 =
40 × 3 = 120

2. Use the associative law to solve these calculations.

a) 16 × 8 = (2 × 8) × 8 (8 × 8) × 2 64 × 2 = 128	b) 18 × 4 = **(2 × 9) × 4** **(9 × 4) × 2** **36 × 2 = 72**	c) 20 × 3 **(2 × 10) × 3** **(10 × 3) × 2** **30 × 2 = 60**
d) 21 × 8 **(3 × 7) × 8** **(8 × 7) × 3** **56 × 3 = 168**	e) 24 × 4 **(3 × 8) × 4** **(8 × 4) × 3** **32 × 3 = 96**	f) 27 × 3 **(3 × 9) × 3** **(3 × 3) × 9** **9 × 9 = 81**
g) 28 × 3 = **(7 × 4) × 3** **(4 × 3) × 7** **12 × 7 = 84**	h) 15 × 4 = **(3 × 5) × 4** **(5 × 4) × 3** **20 × 3 = 60**	i) 12 × 8 = **(2 × 6) × 8** **(6 × 8) × 2** **48 × 2 = 96**

Associative Law of Multiplication **Answers**

Aim: To solve multiplication problems involving the 6, 7 and 8 multiplication tables using associative law.

The associative law of multiplication explains that the answer to a multiplication calculation will be the same no matter how the numbers are grouped, or in which order these groups are multiplied.

$(6 \times 7) \times 8$ is the same as $6 \times (7 \times 8)$ is the same as $(6 \times 8) \times 7$

1. Solve and match up these calculations:

(6 × 6) × 2 = **72**	4 × (8 × 10) = **320**
(7 × 7) × 3 = **147**	(3 × 2) × 7 = **42**
(4 × 8) × 10 = **320**	(6 × 2) × 6 = **72**
(3 × 7) × 2 = **42**	6 × (6 × 3) = **108**
(6 × 6) × 3 = **108**	(7 × 3) × 7 = **147**

We can use the associative law to help us solve multiplication problems involving larger numbers.

For example: 15 × 7 can become (3 × 5) × 7

We can then regroup the numbers in the multiplication into the simplest calculation to solve:

(5 × 7) × 3 =

35 × 3 = 105

2. Use the associative law to solve these calculations.

a) 16 × 7 =	b) 18 × 6 =	c) 20 × 8
(2 × 8) × 7	**(2 × 9) × 6**	**(2 × 10) × 8**
(7 × 8) × 2	**(6 × 9) × 2**	**(10 × 8) × 2**
56 × 2 = 128	**54 × 2 = 108**	**80 × 2 = 160**
d) 21 × 7	e) 24 × 6	f) 27 × 8
(3 × 7) × 7	**(3 × 8) × 6**	**(3 × 9) × 8**
(7 × 7) × 3	**(6 × 8) × 3**	**(9 × 8) × 3**
49 × 3 = 147	**48 × 3 = 144**	**72 × 3 = 216**
g) 28 × 7 =	h) 15 × 6 =	i) 12 × 8 =
(4 × 7) × 7	**(3 × 5) × 6**	**(2 × 6) × 8**
(7 × 7) × 4	**(5 × 6) × 3**	**(6 × 8) × 2**
49 × 4 = 196	**30 × 3 = 90**	**48 × 2 = 96**

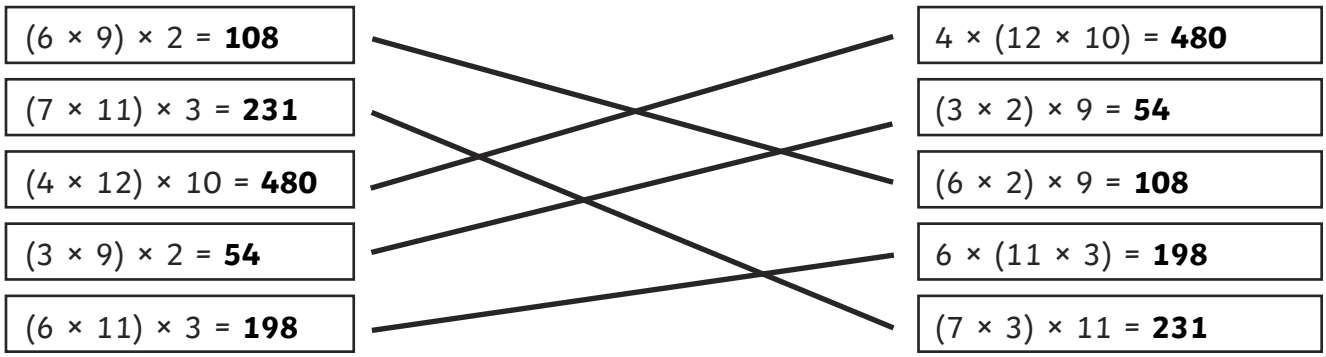
Associative Law of Multiplication **Answers**

Aim: To solve multiplication problems involving the 9, 11 and 12 multiplication tables using associative law.

The associative law of multiplication explains that the answer to a multiplication calculation will be the same no matter how the numbers are grouped, or in which order these groups are multiplied.

$(9 \times 12) \times 11$ is the same as $9 \times (12 \times 11)$ is the same as $(9 \times 11) \times 12$

1. Solve and match up these calculations:



We can use the associative law to help us solve multiplication problems involving larger numbers. For example: 15 × 9 can become (3 × 5) × 9

We can then regroup the numbers in the multiplication into the simplest calculation to solve: (5 × 9) × 3 =

45 × 3 = 135

2. Use the associative law to solve these calculations.

a) 16 × 9 =	b) 18 × 9 =	c) 20 × 9
(2 × 8) × 9	**(2 × 9) × 9**	**(2 × 10) × 9**
(9 × 8) × 2	**(9 × 9) × 2**	**(9 × 10) × 2**
72 × 2 = 144	**81 × 2 = 162**	**90 × 2 = 180**
d) 21 × 9	e) 24 × 9	f) 27 × 9
(3 × 7) × 9	**(3 × 8) × 9**	**(3 × 9) × 9**
(9 × 7) × 3	**(9 × 8) × 3**	**(9 × 9) × 3**
63 × 3 = 189	**72 × 3 = 216**	**81 × 3 = 243**
g) 28 × 9 =	h) 32 × 9 =	i) 35 × 9 =
(4 × 7) × 9	**(4 × 8) × 9**	**(5 × 7) × 9**
(9 × 7) × 4	**(9 × 8) × 4**	**(9 × 7) × 5**
63 × 4 = 252	**72 × 4 = 288**	**63 × 5 = 315**