



6th  
Basic

7th  
Advanced

# Helping With Math

USA  
GRADES

## Multiplication of Integers with Like Signs

*Suitable for students aged 10-12*



This pack is suitable for learners aged 10 - 12 years old or 6th and 7th graders (USA). The content covers fact files and relevant basic and advanced activities involving the multiplication of integers with like signs.

First celebrated in April 1986, Math Awareness Week expanded into a month-long celebration in 1999. Let's celebrate Math Month by learning about the multiplication of integers with like signs! Are you excited, Amy?



*"Math Month Celebration"*



Yes, Ana! I am so excited. Let us review the rule! But before that, what are integers?



**Integers** are the negative numbers, 0 and positive whole numbers.

{..., -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5,...}



## MULTIPLICATION OF LIKE INTEGERS

Multiplication of integers is the process of repetitive addition including positive and negative integers.

**Like integers** are integers with the same signs.

- 4 and -5  
+10 and +6  
-3 and -10



### MULTIPLICATION RULE

To multiply like integers, just multiply their absolute values. The product of the two integers with same signs is always a **positive number**.

$$\oplus \times \oplus = \oplus$$

$$\ominus \times \ominus = \oplus$$

### EXAMPLES

- $(-5)(-4) = 20$
- $(7)(4) = 28$
- $(-3)(-9) = 27$
- $(3)(5)(1)(3) = 45$
- $(-2)(-4)(-3)(-2)(-1)(-2) = 96$



*If you are multiplying even number of negatives or positives, the product is positive.*



## YOUR TURN!

Multiply the following integers.



a.  $(-4)(-5) = \underline{\hspace{2cm}}$

b.  $(-5)(-6) = \underline{\hspace{2cm}}$

c.  $(-8)(-9) = \underline{\hspace{2cm}}$

d.  $(3)(12) = \underline{\hspace{2cm}}$

e.  $(11)(10) = \underline{\hspace{2cm}}$

f.  $(-19)(-2) = \underline{\hspace{2cm}}$

g.  $(-21)(-25) = \underline{\hspace{2cm}}$

h.  $(4)(26) = \underline{\hspace{2cm}}$

a.  $(-4)(-5)(-3)(-1) = \underline{\hspace{2cm}}$

b.  $(-1)(-7)(-3)(-2) = \underline{\hspace{2cm}}$

c.  $(3)(2)(3)(3) = \underline{\hspace{2cm}}$

d.  $(10)(4)(6)(0) = \underline{\hspace{2cm}}$

e.  $(-9)(-2)(-1)(-2)(-3)(-4) = \underline{\hspace{2cm}}$

f.  $(4)(2)(1)(5)(6)(10) = \underline{\hspace{2cm}}$

g.  $(-3)(-8)(1)(-2)(-3)(3) = \underline{\hspace{2cm}}$

h.  $(3)(11)(2)(5)(2)(2) = \underline{\hspace{2cm}}$



### REMEMBER

- The product of **two like integers** is a **positive number**.

Positive x positive = positive

Negative x negative = positive

- The product of an even number of negatives or even number of positives is always a positive number.
- The product of 0 and integers is always 0.



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# MATH-ABOUT INTEGERS?

G6  
Basic

Amy and Ana were assigned to do one of the exhibits about integers. Let us help them by identifying the statements if True or False. If False, change the underlined word/s to make the statement correct.



\_\_\_\_\_ 1. Integers are the negative numbers, 0 and positive whole numbers.

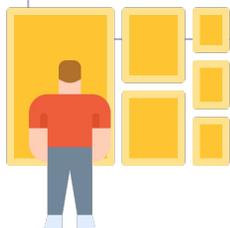
\_\_\_\_\_ 2. The product of two like integers is a negative number.

\_\_\_\_\_ 3. If you multiply a negative integer by a negative integer, the product is positive.

\_\_\_\_\_ 4. If you multiply -1, -3, -5 and -8, the product is -120.

\_\_\_\_\_ 5. The product of an odd number of negatives or even number of positives is always a positive number.

\_\_\_\_\_ 6. The product of zero and integers is always positive.



# LOOK AT THE SIGNS!

G6  
Basic

Ana and Amy are having trouble in the multiplication of integers rule. Let us help them by reminding the process and by encircling the product of the following integers.



1.  $(4)(5) =$                       -20                      9                      20                      -9

2.  $(-6)(-4) =$                       24                      12                      -12                      -24

3.  $(-12)(-5) =$                       17                      -70                      70                      60

4.  $(-8)(-8) =$                       16                      24                      -64                      64

5.  $(-11)(-4) =$                       -15                      15                      44                      -44

6.  $(15)(3) =$                       45                      18                      -45                      -18

7.  $(21)(4) =$                       84                      -84                      -25                      25

8.  $(16)(6) =$                       22                      96                      69                      -22



# CHALLENGE UP!

G6  
Basic

Ana and Amy enjoy celebrating Math Month. They have another challenge, can you help them by multiplying the integers? Write the products inside the table.

1.

x	-5	-7
-3		
-4		

2.

x	4	8
4		
0		

3.

x	9	6
4		
5		

4.

x	-6	-7
-8		
-6		

5.

x	-10	-11
-5		
-7		



# MATH GAME DAY

G6  
Basic

Another game for Math month celebration! Ana and Amy need to answer the following sets of integers. Can you show them what you have learned about the process and the rule? You got this!

1.

$$(15)(4) =$$

6.

$$(-28)(-4) =$$

2.

$$(17)(9) =$$

7.

$$(-12)(-9) =$$

3.

$$(-16)(-5) =$$

8.

$$(25)(8) =$$

4.

$$(-8)(-21) =$$

9.

$$(46)(3) =$$

5.

$$(22)(9) =$$

10.

$$(-61)(5) =$$



# RULE CHECK!

G6  
Basic

It is now the time for Ana and Amy to explain the rule to their friends. Can you help them? If correct, put a check (✓) inside the box and if incorrect, write the correct product.

1 The product of  $-15$  and  $-9$  is  $-135$ .

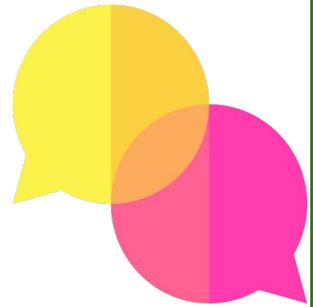
2 The product of  $14$  and  $12$  is  $168$ .

3 The product of  $-18$  and  $-11$  is  $178$ .

4 The product of  $-26$  and  $-13$  is  $338$ .

5 The product of  $27$  and  $25$  is  $655$ .

6 The product of  $-51$  and  $-14$  is  $-714$ .



# MULTIPLY THE FUN!

G7  
Advanced

To continue Math Month celebration, Ana and Amy are excited to multiply the fun! How about you? Show them the rules and process of multiplication of integers. Write the product on the space provided.

	Given	Product
1.	$(-15)(-3) =$	
2.	$(4)(23) =$	
3.	$(5)(12) =$	
4.	$(-67)(-4) =$	
5.	$(-88)(-2) =$	
6.	$(12)(13) =$	
7.	$(11)(24) =$	
8.	$(-21)(-15) =$	
9.	$(-89)(0) =$	
10.	$(-65)(-5) =$	
11.	$(-101)(-4) =$	
12.	$(-304)(-3) =$	



## GO FOR TWO OR MORE

G7  
Advanced

Time to celebrate more! Ana and Amy were given another task to complete. How about multiplying two or more integers? Write the solution and product on the space provided.



1.  $(13)(14) =$

2.  $(-23)(-13) =$

3.  $(9)(8)(2)(1) =$

4.  $(-3)(-3)(-3)(-3) =$

5.  $(-5)(-5)(-2)(-2) =$

6.  $(3)(9)(10)(2) =$



# INTERESTING INTEGERS

G7  
Advanced

Another round of interesting integers! Show the process on multiplying more than 2 integers. Do not forget the rule! Write your solution and final answer.

1.

$$(-4)(-5)(-6)(-7) =$$

4.

$$(2)(2)(2)(2)(2)(2) =$$

2.

$$(3)(2)(8)(2) =$$

5.

$$(4)(-5)(2)(-3)(-3)(-3) =$$

3.

$$(-3)(7)(3)(-7) =$$

6.

$$(7)(-2)(2)(8)(0)(-9) =$$



# SOLVE AND CHECK!

G7  
Advanced

Amy and Ana are now ready to answer this set of integers. Are you ready to multiply the integers? Solve the following and do not forget to check the rule!

1.  $(4)(7)(3)(2)(1)(2) =$



2.  $(-5)(8)(3)(-1)(-3)(-4) =$

3.  $(2)(-2)(2)(2)(2)(-5)(5)(5) =$

4.  $(3)(1)(3)(1)(4)(-5)(-1)(6) =$



Ana and Amy are on their last activity on celebrating Math Month. Study the following word problems. Represent the given using the integers and write your solution and final answer on the space provided.

1. The temperature rises  $3^{\circ}\text{C}$  each hour from 8:00 a.m. to 2:00 p.m. What is the total change in temperature during this period of time?



2. Jane works 12 days in a month as her part time job. She earns \$25 each day. She completed her job in 2 months and her boss decided to double her earnings in the end. What is her total earnings?



3. Amelia missed the payment on her bill 5 times last year. The bank charges \$15 each missed payment. How much does she need to pay?



# ANSWER GUIDE

## Activity 1

- |             |                |         |
|-------------|----------------|---------|
| 1. true     | 3. true        | 5. even |
| 2. positive | 4. +120 or 120 | 6. zero |

## Activity 2

- |       |       |       |       |
|-------|-------|-------|-------|
| 1. 20 | 3. 60 | 5. 44 | 7. 84 |
| 2. 24 | 4. 64 | 6. 45 | 8. 96 |

## Activity 3

- |                     |                   |                     |                     |                     |
|---------------------|-------------------|---------------------|---------------------|---------------------|
| 1. 15, 21<br>20, 28 | 2. 16, 32<br>0, 0 | 3. 36, 24<br>45, 30 | 4. 48, 56<br>36, 42 | 5. 50, 55<br>70, 77 |
|---------------------|-------------------|---------------------|---------------------|---------------------|

## Activity 4

- |        |        |        |        |         |
|--------|--------|--------|--------|---------|
| 1. 60  | 3. 80  | 5. 198 | 7. 108 | 9. 138  |
| 2. 153 | 4. 168 | 6. 112 | 8. 200 | 10. 305 |

## Activity 5

- |        |        |        |
|--------|--------|--------|
| 1. 135 | 3. 198 | 5. 675 |
| 2. ✓   | 4. ✓   | 6. 714 |

## Activity 6

- |        |        |         |
|--------|--------|---------|
| 1. 45  | 5. 176 | 9. 0    |
| 2. 92  | 6. 156 | 10. 325 |
| 3. 60  | 7. 264 | 11. 404 |
| 4. 268 | 8. 315 | 12. 912 |



# ANSWER GUIDE

## Activity 7

- |        |       |        |
|--------|-------|--------|
| 1. 182 | 3. 14 | 5. 100 |
| 2. 299 | 4. 81 | 6. 540 |

## Activity 8

- |        |        |         |
|--------|--------|---------|
| 1. 840 | 3. 441 | 5. 1080 |
| 2. 96  | 4. 64  | 6. 0    |

## Activity 9

- |        |         |         |         |
|--------|---------|---------|---------|
| 1. 336 | 2. 1440 | 3. 4000 | 4. 1080 |
|--------|---------|---------|---------|

## Activity 10

1.  $3 \times 6 = 18^{\circ}\text{C}$  change in temperature
2.  $12 \times 25 \times 2 \times 2 = \$1200$  total earnings in 2 months
3.  $-5 \times -15 = \$75$  total amount she needs to pay



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