

Important Concepts . . .

# Preview Review



**Mathematics    Grade 8**  
**W1 - Lesson 4: Multiplying and Dividing**  
**Integers**

## Important Concepts of Grade 8 Mathematics

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## Materials Required

Protractor  
Ruler  
Calculator

**No Textbook  
Required**

**This is a stand-  
alone course.**

### Mathematics Grade 8

Version 6

Preview/Review W1 - Lesson 4

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**Publisher: Alberta Distance Learning Centre**

**Written by: Monica dHamrait**

**Reviewed by: Patty Rogerson**

**Project Coordinator: Donna Silgard**

**Preview/Review Publishing Coordinating Team:**

**Heather Martel and Nicole Mckeand**



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# Preview/Review Concepts for Grade Eight Mathematics



***W1 - Lesson 4:***

***Multiplying and Dividing  
Integers***

# OBJECTIVES

By the end of this lesson, you will be able to:

- Apply rules for multiplying and dividing integers
- Solve an expression involving integers and apply the order of operations
- Solve problems involving the multiplication and division of integers

## GLOSSARY

**BEDMAS** – an acronym that is used to apply the order of operations.

**Dividend** – the number that is being divided by another number.

**Divisor** – the number by which a dividend is divided.

**Factors** – the numbers that are multiplied to give a product. A factor of a given number will divide into the given number with no remainder left over. For example, the 4 and 5 are factors of 20.

**Product** – the answer that results when numbers are multiplied.

**Quotient** – the answer that results when numbers are divided.

## W1 - Lesson 4: Multiplying and Dividing Integers

### Materials required:

- Paper, Pencil, and Calculator

### Part 1: Multiplying Integers

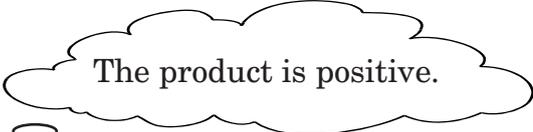
Multiplying integers involves a similar process as multiplying whole numbers. The only difference is that you have to watch the signs of the factors to decide whether the answer will be positive or negative.

Apply the following sign rules when multiplying integers:

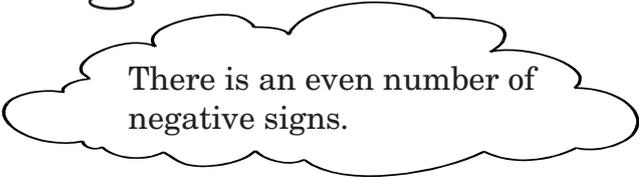
- If there is an **even** number of negative signs, then the answer will be **positive**
- If there is an **odd** number of negative signs, then the answer will be **negative**

#### Example 1

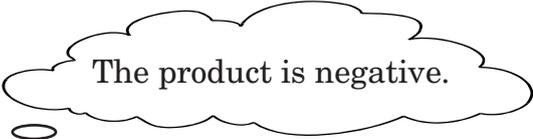
$$(-4) \times (-3) = +12$$



The product is positive.

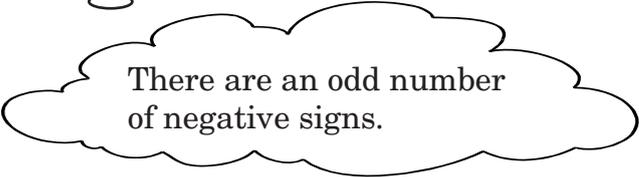


There is an even number of negative signs.

**Example 2**

The product is negative.

$$(+8) \times (-6) = -48$$



There are an odd number of negative signs.

**Practice Questions**

1.  $(+9) \times (-12) =$

2.  $(-6) \times (-5) =$

3.  $(-3) \times (+11) =$

4.  $(+12) \times (+7) =$

## Part 2: Dividing Integers

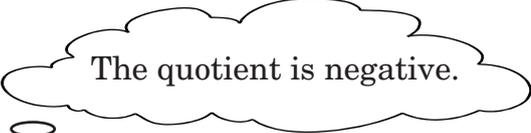
Dividing integers involves a similar process as dividing whole numbers. The only difference is that you have to watch the signs of the numbers being divided to decide whether the answer will be positive or negative.

Apply the following sign rules when dividing integers:

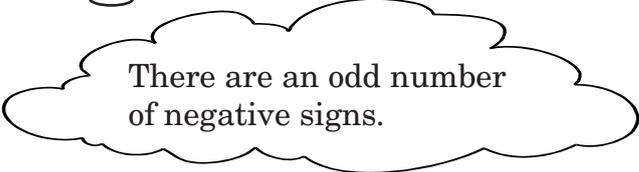
- If there is an **even** number of negative signs, then the answer will be **positive**
- If there is an **odd** number of negative signs, then the answer will be **negative**

### Example 1

$$(+16) \div (-8) = -2$$



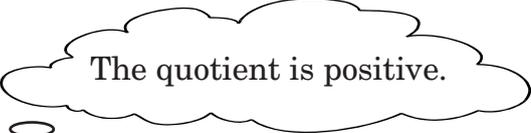
The quotient is negative.



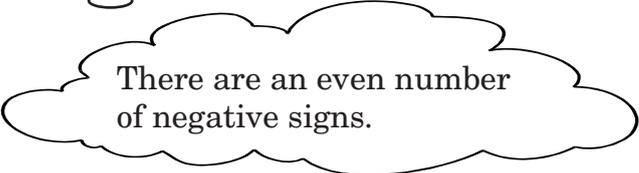
There are an odd number of negative signs.

### Example 2

$$(-45) \div (-9) = +5$$



The quotient is positive.



There are an even number of negative signs.

**Practice Questions**

1.  $(-64) \div (+8) =$

2.  $(-42) \div (-6) =$

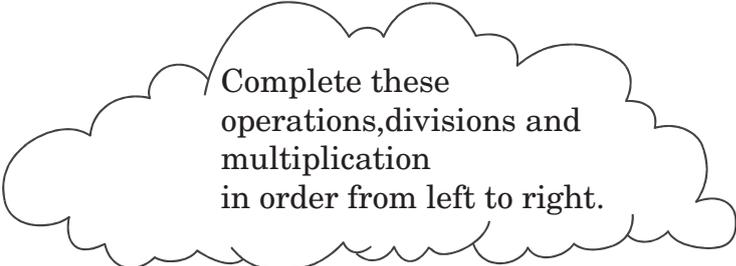
3.  $(+24) \div (-6) =$

4.  $(-75) \div (+25) =$

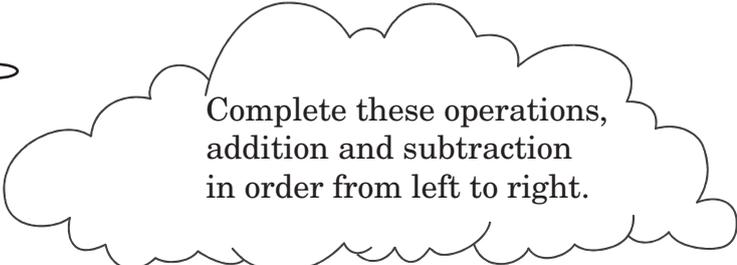
### Part 3: Applying Order of Operations

When calculating the answer to an expression with many mathematical operations you must follow the order of operations. Use the acronym BEDMAS to help you.

**B** - brackets  
**E** - exponents  
**D** - division  
**M** - multiplication  
**A** - addition  
**S** - subtraction



Complete these operations, divisions and multiplication in order from left to right.



Complete these operations, addition and subtraction in order from left to right.

#### Example 1

Evaluate the following expression  $(-23 + 12) \div 11$ .

**Step 1:** Complete the operations found in the brackets.

$$= \underline{(-23 + 12)} \div 11$$

$$= -11 \div 11$$

**Step 2:** Complete the division.

$$= -11 \div 11$$

$$= -1$$

**Example 2**

Evaluate the following expression  $(-12) - (5-32) + 3^2$ .

**Step 1:** Complete the operations found in the brackets.

$$\begin{aligned} &= (-12) - (5 - 32) + 3^2 \\ &= (-12) - (27) + 3^2 \end{aligned}$$

**Step 2:** Solve the exponents.

$$\begin{aligned} &= (-12) - (27) + 3^2 \\ &= (-12) - (27) + 9 \end{aligned}$$

**Step 3:** Complete the subtraction.

$$\begin{aligned} &= (-12) - (27) + 9 \\ &= 15 + 9 \end{aligned}$$

**Step 4:** Complete the addition.

$$\begin{aligned} &= 15 + 9 \\ &= 24 \end{aligned}$$

**Practice Questions**

1.  $(-2)^3 + 5(-4 - 3)$

2.  $-2(9 - (-3))^2 \div (-12)$

3.  $5 - 10 + 7^2 \times 3$

4.  $-34 - 5(-45 \div 15)^3$

## Lesson 4: Assignment

1.  $(+36) \times (-3) =$

2.  $(-52) \times (-4) =$

3.  $(-17) \times (+5) =$

4.  $(+22) \times (+10) =$

5.  $(-66) \div (-11) =$

6.  $(+84) \div (-4) =$

7.  $(-72) \div (+9) =$

8.  $(+65) \div (+13) =$

Solve the following problems.

9. At 2:00 pm in the afternoon the temperature outside was  $+24^{\circ}\text{C}$ . Each hour the temperature decreased by 4 degrees. At what time was the temperature outside  $0^{\circ}\text{C}$ ?

10. A submarine dives a depth of 24 metres every time it makes a plunge. How far beneath the water will it be if it makes 7 plunges?

11. Jocelyn owes her sister \$250.00. If she pays her sister \$50.00 every month, how many months will it take her to pay her sister back?
12. Ethan has \$560.00 in his bank account. In one month he made 5 withdrawals of \$65.00 each. How much money does he have in his bank account now?
13.  $(-12) - 5^2 \times (-6) =$

14.  $(-8) - (11) \times (-27 \div 3)$

15.  $((-16) - 7 \times (-4)) \div 2$

16.  $(-36) \div 4 - (-6) \times 3$

