

Lesson 49: Multiplication and Division of Signed Numbers

Purpose of lesson: You will learn how to **multiply** and **divide signed numbers**.



You will follow similar rules for multiplication and division of signed numbers. However, these rules are different from the rules learned for addition and subtraction of signed numbers. Be careful not to confuse them.

Rules to multiply and divide positive (+) or negative (-) numbers:

- 1) First, multiply or divide the numbers.
- 2) If both signs are the same, the answer will be positive (+).
- 3) If the signs are not the same (one negative and one positive), the answer will be negative (-).

Multiplication Examples:

1) Multiply $(-4) \times (-5) =$

Using rule 1, first multiply the numbers which equals 20. Look to the sign of each number to see that both are the same, negative (-). Follow rule 2 which states if each number sign is the same, the answer will be positive (+). *This is true, even if the question has negative signs for both.* The answer is +20.

2) Multiply $(+5) \times (+6) =$

Using rule 1, first multiply the numbers which equals 30. Look to the sign of each number to see that both are the same, positive (+). Follow rule 2 which states if each number sign is the same, the answer will be positive (+). The answer is +30.

3) Multiply $(-9) \times (+10) =$

Using rule 1, first multiply the numbers which equals 90. Look to the sign of each number to see that each sign is different, one negative (-) and one positive (+). Follow rule 3 which states if the signs are not the same, the answer will be negative (-). The answer is -90.

4) Multiply $(+20) \times (-2) =$

Using rule 1, first multiply the numbers which equals 40. Look to the sign of each number to see that each sign is different, one positive (-) and one negative (+). Follow rule 3 which states if the signs are not the same, the answer will be negative (-). The answer is -40.

Division Examples:

1) Divide $(+100) \div (+5) =$

Using rule 1, first divide both numbers which equals 20. Look to the sign of each number to see that both are the same, positive (+). Follow rule 2 which states if each number sign is the same, the answer will be positive (+). The answer is +20.

2) Divide $(-63) \div (-7) =$

Using rule 1, first divide both numbers which equals 9. Look to the sign of each number to see that both are the same, negative (-). Follow rule 2 which states if each number sign is the same, the answer will be positive (+). The answer is +9.

3) Divide $(+81) \div (-9) =$

Using rule 1, first divide both numbers which equals 9. Look to the sign of each number to see that the signs are different, one positive (+) and one negative (-). Follow rule 3 which states if if the signs are not the same, the answer will be negative (-). The answer is -9.

4) Divide $(-15) \div (+3) =$

Using rule 1, first divide both numbers which equals 5. Look to the sign of each number to see that the signs are different, one negative (-) and one positive (+). Follow rule 3 which states if if the signs are not the same, the answer will be negative (-). The answer is -5.

Remember - if both signs are negative, in a multiplication or division problem, your answer will be positive.



Take Lesson 49 Quiz 1

Take Lesson 49 Quiz 2