Multiplying and Dividing Integers Guided Notes

- Multiplying can be represented 3 different ways:
  1. _____ ex:
  2. _____ ex:
  3. _____ ex:

- Division can be represented 2 different ways:
  1. _____ ex:
  2. _____ ex:

Rules for Multiplying and Dividing Integers:

- If the numbers have the _____ sign, the answer is _____.

- If the numbers have _____ signs, the answer is _____.

Multiplication	Division
Positive x positive = _____	Positive ÷ positive = _____
Negative x negative = _____	Negative ÷ negative = _____
Positive x negative = _____	Positive ÷ negative = _____
Negative x positive = _____	Negative ÷ positive = _____

- Practice:

  1. -16 ÷ 2 =

  2. 14 ÷ 2 =

  3. -3 x -9 =

  4. 56 ÷ -8 =

  5. -54 ÷ -9 =

  6. -9 x 8 =

OPERATIONS WITH INTEGERS

ADDITION
When addends have the same sign, add. Use that sign when you write the sum.
$$5 + 8 = 13$$
$$^{-}20 + ^{-}30 = ^{-}50$$
When addends have different signs, subtract. Use the sign of the greater addend.
$$^{-}6 + 4 = ^{-}2$$
$$45 + ^{-}10 = 35$$

SUBTRACTION
To subtract an integer, add its opposite.
The opposite of 12 is $^{-}12$.
$$4 - 12 = 4 + ^{-}12 = ^{-}8$$
$$9 - ^{-}12 = 9 + 12 = 21$$
The opposite of $^{-}15$ is 15.
$$1 - ^{-}15 = 1 + 15 = 16$$
$$^{-}20 - ^{-}15 = ^{-}20 + 15 = ^{-}5$$

An integer is a whole number or the opposite of a whole number.

MULTIPLICATION
When the factors have the same sign, the product is positive.
$$5 x 6 = 30$$
$$^{-}13 x ^{-}3 = 39$$
When the factors have different signs, the product is negative.
$$^{-}6 x 8 = ^{-}48$$
$$9 x ^{-}11 = ^{-}99$$

DIVISION
When the dividend and the divisor have the same sign, the quotient is positive.
$$45 ÷ 9 = 5$$
$$^{-}120 ÷ ^{-}6 = 20$$
When the dividend and the divisor have different signs, the quotient is negative.
$$35 ÷ ^{-}5 = ^{-}7$$
$$^{-}250 ÷ 10 = ^{-}25$$