## Multiplying of Integers

Write each of the repeated additions as multiplication:

⇒ (+2) + (+2) + (+2) + (+2) + (+2) = _____

⇒ (-6) + (-6) + (-6) = _____

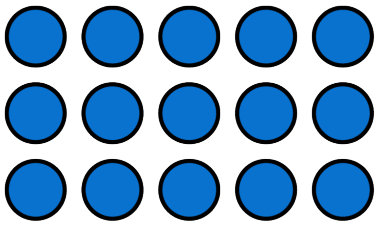
Write each of the multiplications as a repeated addition.

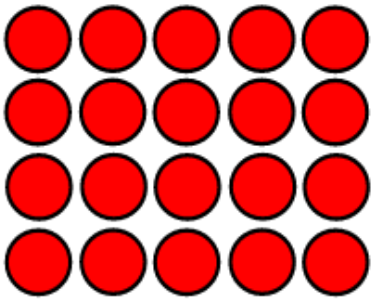
⇒ (+2) × (+5) = _____

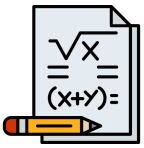
⇒ (6) × (-3) = _____

Do these two methods mean the same thing? Is there a difference between these expressions and the previous ones? Let's Draw a picture!

Write each of the following array diagrams as a repeated addition and as a multiplication statement.








Ways of Showing Multiplication

⇒ (a × b) → Cross-Product
⇒ (a • b) → Dot Product
⇒ (a)(b) → Brackets
⇒ a(b) → Coefficient

**Tip:** when writing negative numbers place the number and negative sign in brackets, to prevent any confusion.

**Example**: 4 –3 or (4) -3 or (4)(-3) etc....

Complete the following:

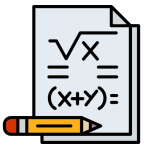
**a)** (+4) × (+6) =____ **b)** (-1) × (+2) = ____ **c)** (-2) × (-3) = ____

**d)** 4 • 5 • (-1) =____ **e)** (10)(-2)(-1) = ____ **f)** (-4) • (-3) × (2) = ____

## Dividing of Integers

Division undoes multiplication. With division, we take a collection of items and divide them amongst certain number groups and we determine how many items are in each group.

**Example:** write 4 × 3 = 12 as a division statement




## Ways of Showing Division

⇒ (a ⟌ b) → Long Division (Vinculum Notation)
⇒ (a ÷ b) → Obelus Sign
⇒ (a / b) → Fraction Notation

Complete the following:

**a)** (-12) ÷ (-3) =____ **b)** (-976) ÷ (8) = ___ **c)** (0) ÷ (576) = ____

**d)** (-20) / (-5) =____ **e)** (16) / (4) = ____ **f)** (-4) / (0) = ____

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## Sign Rule (Multiplying & Dividing ONLY)

If a and b are natural numbers then,

a x b =

(-a) x (-b) =

a x (-b) =

(-a) x b =

In general, if there is an ***odd*** number of negative (-) signs then the answer will be ***negative*** (-). If there is an ***even*** number of negative (-) signs then the answer will be ***positive*** (+).