***Order of Operations: Numerical Expressions***

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| **Order of Operations**1. Simplify the expressions inside grouping symbols, like parentheses.2. Find the value of all powers.3. Multiply and divide in order **from left to right.**4. Add and subtract in order **from left to right.** |

**Example 1**

**Find the value of 48 ÷** **(3 + 3) – 22.**

48 ÷ (3 + 3) – 22 = 48 6 – 22 Simplify the expression inside the parentheses.

 = 486 – 4 Find 22.

 = 8 – 4 Divide 48 by 6.

 = 4 Subtract 4 from 8.

**Example 2**

**Write and solve an expression to find the total cost of planting flowers in the garden.**

|  |  |  |
| --- | --- | --- |
| **Item** | **Cost per Item** | **Number of Items Needed** |
| Pack of flowers | $4 | 5 |
| Bag of dirt | $3 | 1 |
| Bottle of fertilizer | $4 | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Words** | cost of 5 flower packs | plus | cost of dirt | plus | cost of fertilizer |
| **Expression** | 5 × $4 | + | $3 | + | $4 |

5 × $4 + $3 + $4 = $20 + $3 + $4 Multiply 5 by $4.

= $23 + $4 Add $20 and $3.

= $27 Add $23 and $4.

The total cost of planting flowers in the garden is $27.

**Exercises**: **Find the value of each expression.**

 **1.** 7 + 2 × 3 **2.** 12 ÷ 3 + 5 **3.** 16 – (4 + 5)

 **4.** 8 × 8 ÷ 4 **5.** 10 + 14 ÷ 2 **6.** 3 × 3 + 2 × 4

 **7.** 25 ÷ 5 + 6 × (12 – 4) **8.** 80 – 8 × 32 **9.** 11 × (9 –22)