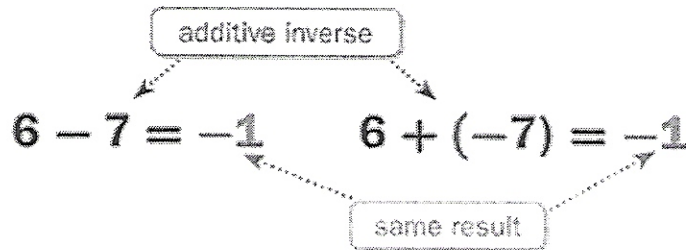


**3.3 Guided Notes (Subtract Integers)**

**Subtracting Positive Integers**

- To subtract an integer, add its additive inverse.
  - $p - q = p + (-q)$
- When you subtract 7, the result is the same as adding its additive inverse, -7.



**Practice: Subtracting Positive Integers**

- $8 - 13$ 
  - Rewrite it as an addition problem!  $8 + (-13)$
  - Is the sum going to be positive or negative? negative
  - Answer -5

- $-10 - 7$ 
  - Rewrite it as an addition problem!  $-10 + (-7)$
  - Is the sum going to be positive or negative? negative
  - Answer -17

3.  $6 - 12$       $6 + (-12) = -6$

4.  $-20 - 15$       $-20 + (-15) = -35$

5.  $-22 - 26$       $-22 + (-26) = -48$

**Subtracting Negative Integers**

- Now let's subtract negative numbers. Our rule still works!
  - We need to add the opposite (or the additive inverse).
  - Minus a negative = plus a positive
  - Example:  $4 - (-4) = 4 + 4 = 8$

**Practice: Subtracting Negative Integers**

1.  $1 - (-2)$      $1 + 2 = 3$
2.  $-10 - (-7)$      $-10 + 7 = -3$
3.  $4 - (-12)$      $4 + 12 = 16$
4.  $-15 - (-5)$      $-15 + 5 = -10$
5.  $18 - (-6)$      $18 + 6 = 24$

**Practice: Evaluating Expressions**

1. Evaluate  $x - y$  if  $x = -6$  and  $y = -5$   
 $(-6) - (-5) = -6 + 5 = -1$
2. Evaluate  $m - n$  if  $m = -15$  and  $n = 8$   
 $(-15) - (8) = -15 + (-8) = -23$
3. Evaluate each expression if  $a = 5, b = -8, c = -9$ 
  - a.  $b - 10$      $(-8) - 10 = -8 + (-10) = -18$
  - b.  $a - b$      $(5) - (-8) = 5 + 8 = 13$
  - c.  $c - a$      $(-9) - (5) = -9 + (-5) = -14$

4. The temperatures on the moon vary from  $-173$  degrees Celsius to  $127$  degrees Celsius. Find the difference between the maximum and minimum temperatures.

$$127 - (-173) = 127 + 173 = 300^{\circ}\text{C}$$

5. Brenda has a balance of  $-\$52$  in her account. The bank charged her a fee of  $\$10$  for having a negative balance. What is her new balance?

$$-52 - 10 = -52 + (-10) = -\$62$$