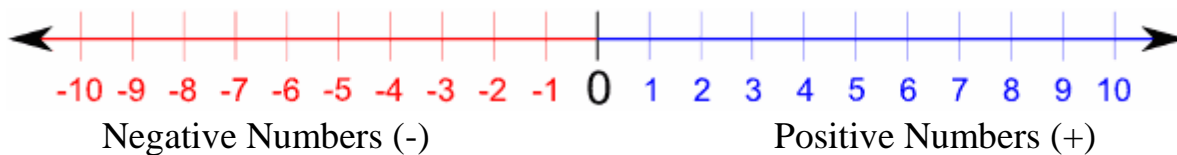


Numbers Can be Positive or Negative:



1. Find the opposite number

Number	Opposite number
a	
4	
-20	
-a	
$-(-a)$	
$-(-(-a))$	

2. Compare

$-4 < 4$	$6 > -4$	$\frac{2}{3} > -\frac{3}{2}$
$-4 > -2$	$-4 < 0$	$-\frac{2}{3} < -1$
$-4 < -6$	$-1 < -\frac{1}{2}$	$-2 < \frac{1}{2}$

3. Compute:

$3 + (-2) =$	$3 + (+2) =$	$-3 - (-2) =$
$3 - (+2) =$	$-3 + (-2) =$	$-3 + (+2) =$
$3 - (-2) =$	$-3 - (+2) =$	$-3 + (+3) =$

4. Compare without calculation.

$$\begin{array}{llll} 100 - (35 - 20) & 100 - (35 + 20) & 100 + (35 - 20) & 100 + (35 + 20) \\ 100 - (-35 - 20) & 100 - (-35 + 20) & 100 + (-35 - 20) & 100 + (-35 + 20) \end{array}$$

5. Rewrite without parenthesis:

$$20 + (2 - 3) =$$

$$20 - (-2 + 3) =$$

$$20 - (2 - 3) =$$

$$20 - (-2 + (-3)) =$$

6. Positive or negative number will be the product of

- a) Two negative and one positive numbers.
- b) One negative and two positive numbers
- c) Three negative numbers.

2. Simplify the following expressions:

a) $m - (n + m) =$

c) $a - (a - b) =$

b) $-(n - x) - x =$

d) $p + (-m + k - p) =$

e) $-a - (m - a + p) =$

f) $-(m - a) - (k + a) =$

g) $m + (k - a - m) =$

h) $m - (a + m) - (-a - m) =$

3. Simplify the following expressions:

a) $2a + 3(a + b) - 3b =$

b) $5(m - 3n) + 14n =$

c) $10b - (c - b) + c =$

8. Calculate:

$$11 + (-5) =$$

$$8 - (-6) =$$

$$-15 - (-8) =$$

$$-11 + (-7) =$$

$$8 \cdot (-8) =$$

$$-7 \cdot (-6) =$$

10. Jane and Mary are planting flowers. Jane can plant all flowers in 2 hours, Mary can do it in 3 hours. How many hours they need to plant all flowers together?

11. Jane and Mary are doing fall clean up in a backyard. Mary can do the job in 6 hours; together they can do it in 4 hours. How many hours does Jane need to clean up the backyard?

Homework #9 review

6. Simplify:

$$(c) \frac{5(39-a)+b(39-a)}{5+b} = \frac{\cancel{5+b}(39-a)}{\cancel{5+b}}$$

$$(d) \frac{a-ab}{1-b} = \frac{a\cancel{(1-b)}}{\cancel{1-b}}$$

9. Solve

There are 80 penguins in a zoo and $\frac{3}{4}$ of them love tuna. While 47 penguins love red tuna, only 42 love yellow tuna. How many penguins love both kinds of tuna?

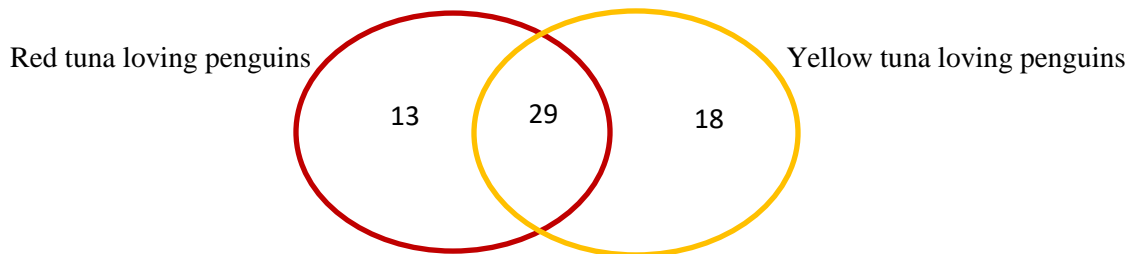
How many penguins love tuna in all? $\frac{3}{4}$ of 80 which can be calculated by $\frac{3}{4} \times 80 = 60$

$60 - 47 = 13$ (13 do not love yellow tuna)

$60 - 42 = 18$ (18 do not love red tuna)

$13 + 18 = 31$ (31 penguins love either red or yellow tuna)

$60 - 31 = 29$ (29 penguins love both types of tuna)



Short solution: $47 + 42 = 89$ and then $89 - 60 = 29$