

Addition of real numbers

Using Rules of Algebra

To add two real numbers with the same sign:

1. Add their absolute values.
2. Determine the sign of the answer.
 - a. If both numbers are positive, then the answer is positive.
 - b. If both numbers are negative, then the answer is negative.

$$-2 + (-3) = -5$$

$$4 + 5 = 9$$

$$-10 + (-21) = -31$$

To add two real numbers with different signs, if the numbers are not opposites:

1. Subtract their absolute values, the larger number minus the smaller number.
2. The sign of the answer will be the same sign of the number with the larger absolute value.

$$3 + (-10)$$

$$|-10| - |3|$$

$$10 - 3 = 7$$

$$\text{answer: } -7$$

$$-12 + 4$$

$$|-12| - |4|$$

$$12 - 4 = 8$$

$$\text{answer: } -8$$

$$-9 + 13$$

$$|13| - |-9|$$

$$13 - 9 = 4$$

$$\text{answer: } 4$$

Add.

1. $4 + 3$
2. $-12 + 4$
3. $19 + (-3) + 6$
4. $11 + 12$
5. $-21 + 0$
6. $-1 + (-4) + 18$
7. $-2 + 5$
8. $23 + (-15)$
9. $-7 + 8 + (-5)$
10. $7 + (-8)$
11. $-11 + 11$
12. $32 + (-15) + (-6)$
13. $-10 + (-15)$
14. $-22 + (-22)$
15. $13 + (-21) + 7$

Write an expression to represent each situation and solve.

16. A football team had a 5-yard loss followed by an 8-yard gain. Find the resulting gain or loss.
17. In one month, Jeff lost 8 pounds. The next month he gained 5 pounds. He lost 4 more pounds in the third month. Find the net gain or loss.