

Integers

Definition: Integers are defined as positive and negative whole numbers, including zero.

Steps involved in addition and subtraction integers:

- 1) Look at the sign in front of the numbers:
- 2) If the sign in front of both numbers are the same, and the two numbers and keep the sign.

Examples:

- a) $4 + 6 = 10$ (Since both numbers are positive, add and keep the sign)
- b) $-4 - 6 = -10$ (Since both numbers are negative, add and keep the sign)
- c) $-25 + -5 = -30$ (Since both numbers are negative, add and keep the sign)

- 3) If the sign in front of both numbers are different, subtract the two numbers and keep the sign of the larger number.

Examples:

- a) $-5 + 3 = -2$ (Since 5 is the larger number, subtract 3 from 5 and keep its sign)
- b) $3 - 4 = -1$ (If there's no sign in front of the number, it's assumed to be positive,
so, the difference between them is 1 and by keep the sign of the larger
number (4), the answer is -1)
- c) $-10 + 5 = -5$ (Since the larger number is 10, subtract and keep its sign)
- d) $6 - 18 = -12$ (Since the larger is 18, subtract and keep its sign)

Note: If you have trouble conceptualizing, relate it to your checking account and pretend the numbers you are adding and subtracting are dollar values.

Steps involved in multiplying and dividing integers:

- 1) Look at the sign in front of the numbers first.
- 2) If the sign in front of both numbers are the same when multiplied or divided, then the answer will always be positive.

Examples:

a) $-5 \times -3 = 15$

b) $5 \times 4 = 20$

c) $-6 \times -9 = 54$

d) $\frac{-81}{-9} = 9$

e) $\frac{27}{3} = 9$

f) $\frac{-16}{-4} = 4$

g) $\frac{-6}{-9} = \frac{2}{3}$

* Special cases:

$$-(-24) = 24$$

If you encounter this type of problem, then the negative sign in front is an understood negative one (-1).

3) If the sign in front of both numbers are different, then the answer will always be negative.

Examples:

a) $-5 \times 3 = -15$

b) $-6 \times 4 = -24$

c) $\frac{-4}{-24} = \frac{-1}{6}$

d) $\frac{-10}{5} = -2$

e) $\frac{27}{-3} = -9$