



### Properties of Subtraction

- 1) What is the result of subtracting 0 from any number?
- 2) What is the result of subtracting a number from itself?
- 3) Is subtraction commutative (i.e., is  $a-b=b-a$ )?
- 4) Is subtraction associative (i.e., is  $(a-b)-c=a-(b-c)$  )?
- 5) If  $a = b+c$ , what is  $a-b$ ?
- 6) If  $a = b+c$ , what is  $a-c$ ?

### Subtracting Across Zeros:

**1)** 
$$\begin{array}{r} 5\ 0\ 0\ 0 \\ -1\ 2\ 3\ 4 \\ \hline \end{array}$$

**2)** 
$$\begin{array}{r} 7\ 0\ 0\ 0 \\ -\ 4\ 5\ 6 \\ \hline \end{array}$$

**3)** 
$$\begin{array}{r} 8\ 0\ 0\ 0 \\ -\ 7\ 8\ 9 \\ \hline \end{array}$$

**4)** 
$$\begin{array}{r} 6\ 0\ 0\ 0 \\ -3\ 2\ 1\ 0 \\ \hline \end{array}$$

**5)** 
$$\begin{array}{r} 9\ 0\ 0\ 0 \\ -2\ 3\ 4\ 5 \\ \hline \end{array}$$

**6)** 
$$\begin{array}{r} 3\ 0\ 0\ 0 \\ -\ 1\ 2\ 3 \\ \hline \end{array}$$

**7)** 
$$\begin{array}{r} 10\ 0\ 0\ 0 \\ -\ 5\ 6\ 7\ 8 \\ \hline \end{array}$$

**8)** 
$$\begin{array}{r} 20\ 0\ 0\ 0 \\ -\ 9\ 8\ 7\ 6 \\ \hline \end{array}$$

**9)** 
$$\begin{array}{r} 15\ 0\ 0\ 0 \\ -\ 1\ 2\ 3\ 4 \\ \hline \end{array}$$



**Properties of Subtraction**

- 1) The result is the same number.
- 2) The result is 0.
- 3) No, subtraction is not commutative.
- 4) No, subtraction is not associative.
- 5)  $a - b = c$
- 6)  $a - c = b$

**Subtracting Across Zeros:**

$$\begin{array}{r} 1) \ 5\ 0\ 0\ 0 \\ - 1\ 2\ 3\ 4 \\ \hline 3\ 7\ 6\ 6 \end{array}$$

$$\begin{array}{r} 2) \ 7\ 0\ 0\ 0 \\ - \ 4\ 5\ 6 \\ \hline 6\ 5\ 4\ 4 \end{array}$$

$$\begin{array}{r} 3) \ 8\ 0\ 0\ 0 \\ - \ 7\ 8\ 9 \\ \hline 7\ 2\ 1\ 1 \end{array}$$

$$\begin{array}{r} 4) \ 6\ 0\ 0\ 0 \\ - 3\ 2\ 1\ 0 \\ \hline 2\ 7\ 9\ 0 \end{array}$$

$$\begin{array}{r} 5) \ 9\ 0\ 0\ 0 \\ - 2\ 3\ 4\ 5 \\ \hline 6\ 6\ 5\ 5 \end{array}$$

$$\begin{array}{r} 6) \ 3\ 0\ 0\ 0 \\ - \ 1\ 2\ 3 \\ \hline 2\ 8\ 7\ 7 \end{array}$$

$$\begin{array}{r} 7) \ 1\ 0\ 0\ 0\ 0 \\ - \ 5\ 6\ 7\ 8 \\ \hline 4\ 3\ 2\ 2 \end{array}$$

$$\begin{array}{r} 8) \ 2\ 0\ 0\ 0\ 0 \\ - \ 9\ 8\ 7\ 6 \\ \hline 1\ 0\ 1\ 2\ 4 \end{array}$$

$$\begin{array}{r} 9) \ 1\ 5\ 0\ 0\ 0 \\ - \ 1\ 2\ 3\ 4 \\ \hline 1\ 3\ 7\ 6\ 6 \end{array}$$

