

Common Core State Standards for Mathematics

**Table 4.** The properties of equality. Here  $a$ ,  $b$ , and  $c$  stand for arbitrary numbers in the rational, real, or complex number systems.

|  |   |
|--|---|
| <i>Reflexive property of equality</i>      | $a = a$   |
| <i>Symmetric property of equality</i>      | If $a = b$ , then $b = a$ .   |
| <i>Transitive property of equality</i>     | If $a = b$ and $b = c$ , then $a = c$ .   |
| <i>Addition property of equality</i>       | If $a = b$ , then $a + c = b + c$ .   |
| <i>Subtraction property of equality</i>    | If $a = b$ , then $a - c = b - c$ .   |
| <i>Multiplication property of equality</i> | If $a = b$ , then $a \times c = b \times c$ .                                       |
| <i>Division property of equality</i>       | If $a = b$ and $c \neq 0$ , then $a \div c = b \div c$ .                            |
| <i>Substitution property of equality</i>   | If $a = b$ , then $b$ may be substituted for $a$ in any expression containing $a$ . |