

Recognizing Properties of Operations

Quick Review		
Property	For Addition	For Multiplication
Commutative	$a + b = b + a$	$ab = ba$
Associative	$(a + b) + c = a + (b + c)$	$(ab)c = a(bc)$
Distributive	$a(b + c) = ab + ac$	
Identity	$0 + x = 0 + x = x$ so 0 is the identity for addition.	$1(x) = (x)1 = x$ so 1 is the identify for multiplication
Inverse	a is the multiplicative inverse of b if $ab = 1$. Multiplicative inverses are called <i>reciprocals</i> .	a is the additive inverse of b if $a + b = 0$ Additive inverses are called <i>opposites</i>
Zero Product	If $ab = 0$ either $a = 0$ or $b = 0$.	

Problems

Identify the property of numbers illustrated in each case.

1. $4x + 5 = 5 + 4x$
2. $(123)1 = 123$
3. $6(3x) = 18x$
4. $5x = 1$ so $x = 1/5$
5. $4(6) + 7(6) = 11(6)$
6. Explain why $3(4 \times 5)$ does not equal $(3 \times 4)(3 \times 5)$