

# Teacher File: Properties Race! Answer Key

Commutative Property of Addition	Associative Property of Addition	Distributive Property
$(6 - x) + 1 = 1 + (6 - x)$ $8 + (2 \cdot 5) + 4 = 8 + 4 + (2 \cdot 5)$ $3(x + 4 + (-11x)) = 3(x + (-11x) + 4)$ $15x + 9y + 7x = 15x + 7x + 9y$ $2 + y + 3 = 2 + 3 + y$	$(3 + x) + 2x = 3 + (x + 2x)$ $9x + (2x + (-5)) = (9x + 2x) + (-5)$ $4 \cdot [(13 + 7a) + 3a] = 4 \cdot [13 + (7a + 3a)]$ $5s + (-3s + 2) = (5s - 3s) + 2$ $(15 + 2a) + 6a = 15 + (2a + 6a)$	$2x(x - 6) = 2x^2 - 12x$ $-5(a - 2b) = -5a + 10b$ $3(4x - 12y) + 2 = 12x - 36y + 2$ $18m^2 + 9m = 9m(2m + 1)$ $28rs^5 + 7s^3 + 2r = 7s^3(4rs^2 + 1) + 2r$
Commutative Property of Multiplication	Associative Property of Multiplication	Score
$8 \cdot x \cdot 2 = 8 \cdot 2 \cdot x$ $5 + \left(\frac{1}{2}a\right)\left(\frac{1}{3}\right) = 5 + \left(\frac{1}{3}\right)\left(\frac{1}{2}a\right)$ $(x + 9)\left(\frac{1}{18}\right) = \left(\frac{1}{18}\right)(x + 9)$ $10 \cdot 12 \cdot x \cdot 2 = 10 \cdot 12 \cdot 2 \cdot x$ $(2 \cdot 3a) \cdot 14 = 14 \cdot (2 \cdot 3a)$	$5 \cdot (3 \cdot x) = (5 \cdot 3) \cdot x$ $\left(6 \cdot \frac{1}{5}\right) \cdot 25 = 6 \cdot \left(\frac{1}{5} \cdot 25\right)$ $8m^2 + [2m \cdot (3m \cdot 9)] = 8m^2 + [(2m \cdot 3m) \cdot 9]$ $(a \cdot 2b) \cdot 7b = a \cdot (2b \cdot 7b)$	<p style="text-align: center;">All properties are correctly identified 1 2 3 4 5</p> <p style="text-align: center;">All members of the group participated 1 2 3 4 5</p> <p style="text-align: center;">Group followed instructions and stayed on task 1 2 3 4 5</p> <p style="text-align: center;">Group constructively critiqued other group 1 2 3 4 5</p>

