
Properties of Equality Homework

1. A football team is on the 35-yard line. The quarterback is sacked at the line of scrimmage. The team gains 0 yards. Which identity or property does this represent? Explain.

2. Identify the sentence that does not belong with the other three. Explain.

$$x+12=12+x$$

$$7h=h\cdot 7$$

$$1+a=a+1$$

$$(2j)k=2(jk)$$

3.	$9 \cdot 7 = 7 \cdot 9$	
4.	$2 \cdot (3 \cdot 4) = (2 \cdot 3) \cdot 4$	
5.	$37 \cdot 0 = 0$	
6.	$1 \cdot 87 = 87$	
7.	$14 + 6 = 6 + 14$	
8.	$3(6a) = (3 \cdot 6)a$	
9.	$2b + 0 = 2b$	
10.	$55 + 6 = 6 + 55$	
11.	If $2^4 = 2^x$ then $4 = x$	
12.	$(x + 3) + y = x + (3 + y)$	
13.	$1 \cdot mp = mp$	
14.	$9 + (5 + 35) = (9 + 5) + 35$	
15.	$6b + 0 = 6b$	
16.	$7x \cdot 0 = 0$	
17.	$4(3 \cdot z) = (4 \cdot 3)z$	
18.	If $4^x = 4^5$ then $x = 5$	

Solve each equation and justify each step.

19. $3(x + 4) - 2(3x - 2) = 1$

20. $2x + 25 = 5x + 10$