Properties of Real Numbers

Property	Addition Example	Multiplication Example
Commutative		
Associative		
Identity		
Inverse		
Distributive		

Name that Property!

13. $5\cdot(2\cdot 8)=(5\cdot 2)\cdot 8$

14. $6(3-7)=6\cdot 3-6\cdot 7$

15. $7y+(-7y)=0$

16. $3a+2b=2b+3a$

17. $(x^2+8x)+1=x^2+(8x+1)$

18. $\frac{1}{5}\cdot 5=1$

19. $3m+3n=3(m+n)$

20. $9c+0=9c$

Name the additive and multiplicative inverse for each number.

21. -8

Additive: _____

Multiplicative: _____

22. $\frac{2}{3}$

Additive: _____

Multiplicative: _____

23. $6w$

Additive: _____

Multiplicative: _____

24. $\sqrt{10}$

Additive: _____

Multiplicative: _____

Closure Property

A set is **closed** (under an operation) if the operation always produces an element of the same set. If an element outside the set is produced, then the operation is **not closed**.

Answer True or False. If false, give a counterexample.

25. Integers are closed under multiplication. _____

26. Irrational numbers are closed under subtraction. _____

27. Whole numbers are closed under division. _____

28. Odd numbers are closed under addition. _____