

*P.I. A.N.1: Identify the properties of real numbers (closure, commutative, associative, distributive, identity, inverse)*

- What property is illustrated by the fact that  $(71.3 \cdot 3.7) \cdot 0 = 0$ ?  
 [A] zero property for multiplication  
 [B] commutative property for multiplication  
 [C] identity property for multiplication  
 [D] associative property for multiplication
- Name the property of equality that justifies the statement.  $5a^2 = 5a^2$   
 [A] Symmetric property  
 [B] Additive identity  
 [C] Transitive property  
 [D] Reflexive property
- What property is illustrated by the fact that  $80.8 \cdot 1 = 80.8$ ?
- What property is illustrated by the fact that  $(64.9 \cdot 60.9) \cdot 88.8 = 64.9 \cdot (60.9 \cdot 88.8)$ ?
- What property is illustrated by the fact that  $26.7 \cdot (62.1 \cdot 7.1) = (62.1 \cdot 7.1) \cdot 26.7$ ?  
 [A] commutative property of multiplication  
 [B] associative property for multiplication  
 [C] identity property for multiplication  
 [D] zero property for multiplication

- Which property is illustrated by the following statement?  
 $(46.2 + 25.8) + 29.4 = (25.8 + 46.2) + 29.4$   
 [A] addition property of zero  
 [B] distributive property of addition  
 [C] associative property of addition  
 [D] commutative property of addition
- Which property is illustrated by the following statement?  
 $(18.8 + 12.9) + 61.4 = (12.9 + 18.8) + 61.4$   
 [A] commutative property of addition  
 [B] distributive property of addition  
 [C] addition property of zero  
 [D] associative property of addition
- (a) Compare:  $\frac{5}{16} + \left(\frac{5}{16} + \frac{4}{16}\right) \bigcirc \left(\frac{5}{16} + \frac{5}{16}\right) + \frac{4}{16}$   
 (b) What property is illustrated by this comparison?
- What property is illustrated by the fact that  $77.9 \cdot (77.7 \cdot 95) = (77.7 \cdot 95) \cdot 77.9$ ?
- What is another name for the opposite of a number?

11. Is the equation true or false? If so, what addition property does it illustrate?  
 $59.5 + (72.9 + 10.1) = (59.5 + 72.9) + 10.1$
12. What property of addition states that the order in which two real numbers are added does not affect the sum?
13. What property is illustrated by the fact that  $37.6 \cdot 1 = 37.6$ ?
- [A] commutative property for multiplication  
[B] identity property for multiplication  
[C] associative property for multiplication  
[D] zero property for multiplication
14. Is the equation true or false? If so, what addition property does it illustrate?  
 $(67.5 + 19.5) + 0 = 67.5 + 19.5$
15. Which property is illustrated by the following statement?  
 $(37.5 + 44.2) + 0 = 37.5 + 44.2$
- [A] addition property of zero  
[B] distributive property of addition  
[C] associative property of addition  
[D] commutative property of addition
16. Which property is illustrated by the following statement?  
 $70.8 + (11.3 + 40.5) = (70.8 + 11.3) + 40.5$
- [A] commutative property of addition  
[B] distributive property of addition  
[C] associative property of addition  
[D] addition property of zero
17. What property is illustrated by the fact that  $(81.9 \cdot 11.9) \cdot 52 = 81.9 \cdot (11.9 \cdot 52)$ ?
- [A] identity property for multiplication  
[B] associative property for multiplication  
[C] commutative property for multiplication  
[D] zero property for multiplication
18. What property is illustrated by the fact that  $(90.8 \cdot 88.2) \cdot 0 = 0$ ?
19. Is the equation true or false? If so, what addition property does it illustrate?  
 $(30.2 + 24) + 62.2 = (24 + 30.2) + 62.2$
20. Is the equation true or false? If so, what addition property does it illustrate?  
 $74.4 + (69.9 + 2.2) = (74.4 + 69.9) + (74.4 + 2.2)$

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- [1] A
- [2] D
- [3] identity property for multiplication
- [4] associative property for multiplication
- [5] A
- [6] D
- [7] A
- [8] (a) = (b) The associative property of addition
- [9] commutative property of multiplication
- [10] Additive inverse
- [11] True. The associative property of addition.
- [12] Commutative property for addition
- [13] B
- [14] True. The addition property of zero.
- [15] A
- [16] C
- [17] B
- [18] zero property for multiplication
- [19] True. The commutative property of addition.
- [20] False