

A.N.1: Identifying Properties: Identify and apply the properties of real numbers (closure, commutative, associative, distributive, identity, inverse)

- 1 Tori computes the value of $8 \cdot 95$ in her head by thinking $8(100 - 5) = 8 \times 100 - 8 \times 5$. Which number property is she using?
 - 1) associative
 - 2) distributive
 - 3) commutative
 - 4) closure
- 2 Which property of real numbers is illustrated by the equation $-\sqrt{3} + \sqrt{3} = 0$?
 - 1) additive identity
 - 2) commutative property of addition
 - 3) associative property of addition
 - 4) additive inverse
- 3 The equation $*(\Delta + \heartsuit) = *\Delta + *\heartsuit$ is an example of the
 - 1) associative law
 - 2) commutative law
 - 3) distributive law
 - 4) transitive law
- 4 While solving the equation $4(x + 2) = 28$, Becca wrote $4x + 8 = 28$. Which property did she use?
 - 1) distributive
 - 2) associative
 - 3) commutative
 - 4) identity
- 5 If M and A represent integers, $M + A = A + M$ is an example of which property?
 - 1) commutative
 - 2) associative
 - 3) distributive
 - 4) closure
- 6 Which property is illustrated by the equation $\frac{3}{2}x + 0 = \frac{3}{2}x$?
 - 1) commutative property of addition
 - 2) distributive property
 - 3) additive inverse property
 - 4) additive identity property
- 7 Which property is illustrated by the equation $ax + ay = a(x + y)$?
 - 1) associative
 - 2) commutative
 - 3) distributive
 - 4) identity
- 8 Which property is represented by the statement $\frac{1}{2}(6a + 4b) = 3a + 2b$?
 - 1) commutative
 - 2) distributive
 - 3) associative
 - 4) identity
- 9 Which property is illustrated by the equation $6 + (4 + x) = 6 + (x + 4)$?
 - 1) associative property of addition
 - 2) associative property of multiplication
 - 3) distributive property
 - 4) commutative property of addition

- 10 The statement $2 + 0 = 2$ is an example of the use of which property of real numbers?

1) associative
2) additive identity
3) additive inverse
4) distributive

- 11 Which property is illustrated by the equation

$$4x(2x - 1) = 8x^2 - 4x?$$

1) associative
2) commutative
3) distributive
4) identity

- 12 Which property of real numbers is illustrated by the equation $52 + (27 + 36) = (52 + 27) + 36$?

1) commutative property
2) associative property
3) distributive property
4) identity property of addition

- 13 The equation $3(4x) = (4x)3$ illustrates which property?

1) commutative
2) associative
3) distributive
4) multiplicative inverse

- 14 When solving for the value of x in the equation $4(x - 1) + 3 = 18$, Aaron wrote the following lines on the board.

[line 1] $4(x - 1) + 3 = 18$

[line 2] $4(x - 1) = 15$

[line 3] $4x - 1 = 15$

[line 4] $4x = 16$

[line 5] $x = 4$

Which property was used *incorrectly* when going from line 2 to line 3?

1) distributive
2) commutative
3) associative
4) multiplicative inverse

- 15 A teacher asked the class to solve the equation $3(x + 2) = 21$. Robert wrote $3x + 6 = 21$ as his first step. Which property did he use?

1) associative property
2) commutative property
3) distributive property
4) zero property of addition

- 16 The equation $(x - 6)(8 + x) = (x - 6) \cdot (8) + (x - 6) \cdot (x)$ illustrates the use of which property?

1) distributive property
2) associative property of addition
3) associative property of multiplication
4) commutative property of multiplication

- 17 A method for solving $5(x - 2) - 2(x - 5) = 9$ is shown below. Identify the property used to obtain each of the two indicated steps.

$$5(x - 2) - 2(x - 5) = 9$$

(1) $5x - 10 - 2x + 10 = 9$ (1) _____

(2) $5x - 2x - 10 + 10 = 9$ (2) _____

$$3x + 0 = 9$$

$$3x = 9$$

$$x = 3$$

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Answer Section

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|----|--------|-----------------|
| 1 | ANS: 2 | REF: 060306a |
| 2 | ANS: 4 | REF: 060413a |
| 3 | ANS: 3 | REF: 080504a |
| 4 | ANS: 1 | REF: 080601a |
| 5 | ANS: 1 | REF: 010720a |
| 6 | ANS: 4 | REF: 060714a |
| 7 | ANS: 3 | REF: fall0705ia |
| 8 | ANS: 2 | REF: 010812a |
| 9 | ANS: 4 | REF: 060827a |
| 10 | ANS: 2 | REF: 080802ia |
| 11 | ANS: 3 | REF: 080806a |
| 12 | ANS: 2 | REF: 010924a |
| 13 | ANS: 1 | REF: 081319ia |
| 14 | ANS: 1 | REF: 061405ia |
| 15 | ANS: 3 | REF: 081419ia |
| 16 | ANS: 1 | REF: 061526ia |

17 ANS:

(1) Distributive; (2) Commutative

REF: 061132ia