

A.REI.A.1: Identifying Properties 1a

- 1 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

- 2 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

- 3 When solving the equation $4(3x^2 + 2) - 9 = 8x^2 + 7$, Emily wrote $4(3x^2 + 2) = 8x^2 + 16$ as her first step. Which property justifies Emily's first step?
- 1) addition property of equality
 - 2) commutative property of addition
 - 3) multiplication property of equality
 - 4) distributive property of multiplication over addition

- 4 A part of Jennifer's work to solve the equation $2(6x^2 - 3) = 11x^2 - x$ is shown below.

$$\text{Given: } 2(6x^2 - 3) = 11x^2 - x$$

$$\text{Step 1: } 12x^2 - 6 = 11x^2 - x$$

Which property justifies her first step?

- 1) identity property of multiplication
- 2) multiplication property of equality
- 3) commutative property of multiplication
- 4) distributive property of multiplication over subtraction

- 5 When solving the equation $12x^2 - 7x = 6 - 2(x^2 - 1)$, Evan wrote $12x^2 - 7x = 6 - 2x^2 + 2$ as his first step. Which property justifies this step?
- 1) subtraction property of equality
 - 2) multiplication property of equality
 - 3) associative property of multiplication
 - 4) distributive property of multiplication over subtraction

- 6 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

- 7 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

1 ANS: 3 REF: 081419ia

2 ANS: 1 REF: 080601a

3 ANS: 1 REF: 061401ai

4 ANS: 4 REF: 081701ai

5 ANS: 4 REF: 011801aii

6 ANS: 1 REF: 061405ia

7 ANS:

(1) Distributive; (2) Commutative

REF: 061132ia