

### A.REI.A.1: Identifying Properties 1b

- 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?
- 2 While solving the equation  $4(x + 2) = 28$ , Becca wrote  $4x + 8 = 28$ . Which property did she use?
- 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?
- 4 A part of Jennifer's work to solve the equation  $2(6x^2 - 3) = 11x^2 - x$  is shown below.  
Given:  $2(6x^2 - 3) = 11x^2 - x$   
Step 1:  $12x^2 - 6 = 11x^2 - x$   
Which property justifies her first step?
- 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?
- 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?
- 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:  
distributive property

REF: 081419ia

2 ANS:  
distributive

REF: 080601a

3 ANS:  
addition property of equality

REF: 061401ai

4 ANS:  
distributive property of multiplication over subtraction

REF: 081701ai

5 ANS:  
distributive property of multiplication over subtraction

REF: 011801aii

6 ANS:  
distributive

REF: 061405ia

7 ANS:  
(1) Distributive; (2) Commutative

REF: 061132ia