Which is an example of the distributive property?

F $10 + 5x = 5x + 10$

G $5(x + 2) = 5x + 10$

H $5x + 10 = 5x + 10$

J $(5 + 10)x = x(5 + 10)$

2010

Given: $3x + 6 \geq 7x - 4$

Using the given inequality, select all that illustrate the application of the subtraction property of inequality.

$3x + 6 - 7x \geq 7x - 4 - 7x$ $\dfrac{1}{3}(3x + 6) \geq \dfrac{1}{3}(7x - 4)$

$3x + 6 - 6 \geq 7x - 4 - 6$ $3x + 6 - 3x \geq 7x - 4 - 3x$

$3(x + 2) \geq 7x - 4$ $\dfrac{(3x + 6)}{7} \geq \dfrac{(7x - 4)}{7}$

2013 Student
Performance Analysis

Pierre solved an inequality as shown.

Step 1: $^-8 \geq n + 3$
Step 2: $^-8 + (^-3) \geq n + 3 + (^-3)$
Step 3: $^-11 \geq n + 0$
Step 4: $^-11 \geq n$

What property justifies the work between Step 3 and Step 4 ?

A Inverse property of addition

B Identity property of addition

C Addition property of inequality

D Commutative property of addition

2013

Which property of real numbers justifies the work shown?

$$13x - 1 = (12x + 15) + 7x$$
$$13x - 1 = 7x + (12x + 15)$$

A Commutative property of addition

B Associative property of addition

C Identity property of addition

D Distributive property

2013

Identify the property that justifies the work between Step 4 and Step 5.

Step 1: $^-6 \leq ^-2x + 3$

Step 2: $^-6 + (^-3) \leq ^-2x + 3 + (^-3)$

Step 3: $^-9 \leq ^-2x + 0$

Step 4: $^-9 \leq ^-2x$

Step 5: $\left(\dfrac{^-1}{2}\right)(^-9) \geq \left(\dfrac{^-1}{2}\right)(^-2x)$

Step 6: $\dfrac{9}{2} \geq 1x$

Step 7: $\dfrac{9}{2} \geq x$

Distributive Property	Commutative Property of Multiplication
Inverse Property of Multiplication	Identity Property of Multiplication
Multiplication Property of Inequality	Addition Property of Inequality

If $2n = 6$, **what property of equality justifies writing**

$$p + 2n = 4p + 15$$

as $p + 6 = 4p + 15$ **?**

A   Addition property

B   Transitive property

C   Symmetric property

D   Substitution property

2009

Jerri wrote these steps when solving an equation.

$$17(x+3) = 6-4$$

Step 1: $17x + 51 = 6 - 4$

Step 2: $17x + 51 = 2$

Step 3: $17x = {}^-49$

Step 4: $x = \dfrac{{}^-49}{17}$

Which property justifies Step 1 ?

F Associative property for addition
G Commutative property for addition
H Distributive property
J Additive identity property

2008

Which property justifies rewriting

$$3x - 5x$$

as

$$\left(3-5\right)x\,?$$

A Associative property of multiplication
B Distributive property
C Commutative property of multiplication
D Associative property of addition

2007

While solving an equation, Lenny wrote the following steps on the board.

$$\left(2x+1\right)+5=9$$

$$2x+\left(1+5\right)=9$$

What property of real numbers guarantees that the second equation is equivalent to the first?

F Associative property of addition
G Additive inverse property
H Commutative property of addition
J Distributive property

2007

The statement

"**If** $\dfrac{1}{2}x = 5$, **then** $x = 10$"

is justified by the —

F associative property of multiplication
G commutative property of multiplication
H addition property of equality
J multiplication property of equality

2006

$$6a^2 - 2a = 2a(3a - 1)$$

What property makes this equation true?

A The reflexive property
B The associative property
C The commutative property
D The distributive property

2005

Consider the procedure used below to solve the given equation.

Given: $3(x - 2) = 17$

(1st step) $3x - 6 = 17$

(2nd step) $3x = 23$

(3rd step) $x = \dfrac{23}{3}$

Which of the following properties is a justification for the 1st step?

A Associative property of addition
B Commutative property of addition
C Distributive property
D Transitive property of equality

2004

Which statement *cannot* be justified by one of the properties of real numbers?

F $(a + b) + c = a + (b + c)$

G $a - (b \div c) = (a - b) \div c$

H $(ab)c = a(bc)$

J $(a + b) + 0 = 0 + (a + b)$

Which property of real numbers is utilized by rewriting $11x + 5xy$ as $x(11 + 5y)$?

A Associative property for addition

B Commutative property for addition

C Closure property for multiplication

D Distributive property for multiplication over addition

Which property justifies the following statement?

If $3a + 3b = 12$ then $3(a + b) = 12$

A Commutative property of multiplication

B Distributive property for multiplication over addition

C Multiplicative identity property

D Associative property of addition

Which statement is *always* true?

A $4 + a = 4 \cdot a$

B $a + (^-4 + 4) = a + 0$

C $a \div 4 = 4 \div a$

D $4 - a = a - 4$

Which is an example of the commutative property of addition?

A $3 + 5m = 3 + (1 + 4)m$

B $3 + 5m = 5m + 3$

C $3 + 5m = (3 + 5)m$

D $3 + 5m = 3m + 5$

What property of real numbers justifies the following statement?

$4x(y + 2) - 3y$ is equivalent to $4x(y) + 4x(2) - 3y$

A The associative property of multiplication

B The commutative property of multiplication

C The distributive property of multiplication over addition

D The closure property of multiplication

The statement

"If $2(3a - 4) = 12$, then $6a - 8 = 12$"

is justified by the —

F   Associative property of multiplication
G   Multiplication property of equals
H   Addition property of equals
J   Distributive property

2000

If $A < B$, which of the following statements *cannot* be true?

A $A + C < B + C$
B $A - C < B - C$
C $AC < BC$
D $^-A < {^-B}$

2000