

A.REI.A.1: Properties of Reals

- 1 What is the multiplicative inverse of $\frac{3}{4}$?
 - 1) -1
 - 2) $\frac{4}{3}$
 - 3) $-\frac{4}{3}$
 - 4) $-\frac{3}{4}$
- 2 The multiplicative inverse of $-\frac{1}{3}$ is
 - 1) $\frac{1}{3}$
 - 2) $-\frac{1}{3}$
 - 3) 3
 - 4) -3
- 3 Which equation illustrates the multiplicative inverse property?
 - 1) $1 \cdot x = x$
 - 2) $x \cdot \frac{1}{x} = 1$
 - 3) $1 \cdot 0 = 0$
 - 4) $-1 \cdot x = -x$
- 4 Which equation illustrates the multiplicative inverse property?
 - 1) $a \cdot 1 = a$
 - 2) $a \cdot 0 = 0$
 - 3) $a \left(\frac{1}{a} \right) = 1$
 - 4) $(-a)(-a) = a^2$
- 5 The reciprocal of 5 is
 - 1) 1
 - 2) $\frac{1}{5}$
 - 3) $-\frac{1}{5}$
 - 4) -5
- 6 The additive inverse of $\frac{1}{a}$ is
 - 1) $-\frac{1}{a}$
 - 2) $-a$
 - 3) 0
 - 4) a
- 7 What is the additive inverse of $\frac{2}{3}$?
 - 1) $-\frac{2}{3}$
 - 2) $\frac{1}{3}$
 - 3) $-\frac{3}{2}$
 - 4) $\frac{3}{2}$
- 8 What is the additive inverse of the expression $a - b$?
 - 1) $a + b$
 - 2) $a - b$
 - 3) $-a + b$
 - 4) $-a - b$
- 9 Which expression must be added to $3x - 7$ to equal 0?
 - 1) 0
 - 2) $3x + 7$
 - 3) $-3x - 7$
 - 4) $-3x + 7$
- 10 If $a \neq 0$ and the sum of x and $\frac{1}{a}$ is 0, then
 - 1) $x = a$
 - 2) $x = -a$
 - 3) $x = -\frac{1}{a}$
 - 4) $x = 1 - a$
- 11 Which equation illustrates the multiplicative identity element?
 - 1) $x + 0 = x$
 - 2) $x - x = 0$
 - 3) $x \cdot \frac{1}{x} = 1$
 - 4) $x \cdot 1 = x$

- 12 Which statement best illustrates the additive identity property?
1) $6 + 2 = 2 + 6$
2) $6(2) = 2(6)$
3) $6 + (-6) = 0$
4) $6 + 0 = 6$
- 13 Which equation is an illustration of the additive identity property?
1) $x \cdot 1 = x$
2) $x + 0 = x$
3) $x - x = 0$
4) $x \cdot \frac{1}{x} = 1$
- 14 Which statement illustrates the additive identity property?
1) $6 + 0 = 6$
2) $-6 + 6 = 0$
3) $4(6 + 3) = 4(6) + 4(3)$
4) $(4 + 6) + 3 = 4 + (6 + 3)$
- 15 Which equation illustrates the associative property?
1) $x + y + z = x + y + z$
2) $x(y + z) = xy + xz$
3) $x + y + z = z + y + x$
4) $(x + y) + z = x + (y + z)$
- 16 Which equation illustrates the associative property?
1) $a(1) = a$
2) $a + b = b + a$
3) $a(b + c) = (ab) + (ac)$
4) $(a + b) + c = a + (b + c)$
- 17 Which expression is an example of the associative property?
1) $(x + y) + z = x + (y + z)$
2) $x + y + z = z + y + x$
3) $x(y + z) = xy + xz$
4) $x \cdot 1 = x$
- 18 Which equation illustrates the associative property of addition?
1) $x + y = y + x$
2) $3(x + 2) = 3x + 6$
3) $(3 + x) + y = 3 + (x + y)$
4) $3 + x = 0$
- 19 Which equation is an example of the use of the associative property of addition?
1) $x + 7 = 7 + x$
2) $3(x + y) = 3x + 3y$
3) $(x + y) + 3 = x + (y + 3)$
4) $3 + (x + y) = (x + y) + 3$
- 20 Which equation illustrates the distributive property for real numbers?
1) $\frac{1}{3} + \frac{1}{2} = \frac{1}{2} + \frac{1}{3}$
2) $\sqrt{3} + 0 = \sqrt{3}$
3) $(1.3 \times 0.07) \times 0.63 = 1.3 \times (0.07 \times 0.63)$
4) $-3(5 + 7) = (-3)(5) + (-3)(7)$
- 21 Which equation illustrates the distributive property?
1) $5(a + b) = 5a + 5b$
2) $a + b = b + a$
3) $a + (b + c) = (a + b) + c$
4) $a + 0 = a$
- 22 Which equation illustrates the distributive property of multiplication over addition?
1) $6(3a + 4b) = 18a + 4b$
2) $6(3a + 4b) = 18a + 24b$
3) $6(3a + 4b) = (3a + 4b)6$
4) $6(3a + 4b) = 6(4b + 3a)$
- 23 If $a + b$ is less than $c + d$, and $d + e$ is less than $a + b$, then e is
1) less than c
2) equal to c
3) less than d
4) greater than d
- 24 The sum of two negative numbers always has to be
1) negative
2) positive
3) zero
4) an integer
- 25 Which statement is true for all real number values of x ?
1) $|x - 1| > 0$
2) $|x - 1| > (x - 1)$
3) $\sqrt{x^2} = x$
4) $\sqrt{x^2} = |x|$
- 26 Perform the indicated operation: $-6(a - 7)$
State the name of the property used.

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Answer Section

- 1 ANS: 2 REF: 010516a
 2 ANS: 4 REF: 010730a
 3 ANS: 2 REF: 010630a
 4 ANS: 3 REF: 011428ia
 5 ANS: 2 REF: 060815a
 6 ANS: 1 REF: 010821a
 7 ANS: 1 REF: 060315a
 8 ANS: 3 REF: 060926ia
 9 ANS: 4 REF: 010207a
 10 ANS: 3 REF: 060011a
 11 ANS: 4 REF: 010314a
 12 ANS: 4 REF: 060624a
 13 ANS: 2 REF: 089907a
 14 ANS: 1 REF: 081209ia
 15 ANS: 4 REF: 011114ia
 16 ANS: 4 REF: 080725a
 17 ANS: 1 REF: 060424a
 18 ANS: 3 REF: 010428a
 19 ANS: 3 REF: 011224ia
 20 ANS: 4 REF: 060108a
 21 ANS: 1 REF: 060503a
 22 ANS: 2 REF: 080413a
 23 ANS: 1

Using the transitive property of inequality, if $d + e < a + b$ and $a + b < c + d$, then $d + e < c + d$. Using the subtraction property of inequality, subtract d from each side of the inequality $d + e < c + d$ to get $e < c$.

REF: 080115a

- 24 ANS: 1 REF: 080810a
 25 ANS: 4

(1) not true if $x = 1$. (2) not true if $x = 1$. (3) not true if $x = -1$

REF: 060207b

- 26 ANS:
 $-6a + 42$. distributive

REF: 061032ia