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Properties of Rational Numbers

1) ***Commutative property***: *While* ***adding***, *any two rational numbers can be _____ in any order, and yet their _____ remains the same.*

2) *If* $a = \frac{3}{4}$ and $b = \frac{5}{6}$, *then which of the following is* ***true*** *for the* ***commutative property****?*

a) $a + b = b - a$

b) $a + b = b - a$

c) $a + b = b + a$

d) $a - b = b - a$

3) *Which of the following operations is* ***not*** *commutative for rational numbers?*

a) Addition *b) Subtraction* *c) both a and b*

4) *Which expression demonstrates the commutative property of* ***addition*** *for rational numbers* $\frac{2}{3}$ *and* $\frac{3}{4}$ *?*

a) $\frac{2}{3} + \frac{3}{4} = \frac{3}{4} + \frac{2}{3}$

b) $\frac{2}{3} - \frac{3}{4} = \frac{3}{4} - \frac{2}{3}$

c) $\frac{2}{3} + \frac{3}{4} = \frac{3}{4} - \frac{2}{3}$

d) $\frac{2}{3} - \frac{3}{4} = \frac{3}{4} + \frac{2}{3}$

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5) The **sum** of any rational number and **0** is the _____ itself.

Thus, $\frac{a}{b} + 0 = 0 + \frac{a}{b} = \frac{a}{b}$.

6) The **additive identity** for every rational number is _____

7) $\frac{13}{11} + 0 =$ -------- a) $0 + \frac{13}{11}$ b) $\frac{13}{11}$ c) $\frac{11}{13}$ d) both a and b

8) Match the following

a) $\frac{4}{7} + \frac{1}{7} =$	$-\frac{1}{8}$
b) $\frac{7}{15} + \frac{2}{9} = \frac{2}{9} + \frac{7}{15}$	0
c) $\frac{-1}{8} + 0$	commutative property
d) Additive identity	$\frac{1}{7} + \frac{4}{7}$

9) Verify the following follows commutative property

a) $\frac{3}{5} + \frac{1}{7} = \frac{3}{5} - \frac{1}{7}$ a) yes b) no

b) $\frac{-13}{5} + \frac{2}{7} = \frac{2}{7} + \frac{-13}{5}$ a) yes b) no

10) Verify: $\frac{1}{3}, \frac{2}{7}$ follows the commutative property of addition

$\frac{1}{3} + \frac{2}{7} = \frac{7(1) \quad 3(2)}{3 \times 7}$	$\frac{2}{7} + \frac{1}{3} = \frac{3(2) \quad 7(1)}{7 \times 3}$
Sum = $\frac{(7+6)}{21}$ = ----------	Sum = $\frac{(6+7)}{21}$ = ----------

commutative property of addition is verified _____

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