

Worksheet: Properties of Addition of Rational Numbers



Q1: Find the additive inverse of $\frac{1}{2}$.

A $-\frac{1}{2}$

B 2

C -2

D $\frac{1}{2}$

Q2: Find the additive inverse of $\frac{2}{3}$.

A $-\frac{2}{3}$

B $\frac{3}{2}$

C $-\frac{3}{2}$

D $\frac{2}{3}$

Q3: Find the additive inverse of $\frac{1}{6}$.

A $-\frac{1}{6}$

B 6

C -6

D $\frac{1}{6}$

Q4: Which of the following is the sum $125\frac{1}{25} + \left(-125\frac{1}{25}\right)$?

A a positive number

B zero

C a negative number

Q5: Evaluate $-4\frac{2}{3} + 13\frac{1}{3}$ using properties of addition.

A 4

B $9\frac{1}{2}$

C 18

D $8\frac{2}{3}$

Q6: Evaluate $-3\frac{1}{7} + 4\frac{5}{7}$ using properties of addition.

A 1

B $1\frac{3}{7}$

C $7\frac{6}{7}$

D $1\frac{4}{7}$

Q7: Evaluate $-8\frac{7}{9} + 13\frac{8}{9}$ using properties of addition.

A $2\frac{2}{9}$

B $5\frac{5}{6}$

C $22\frac{2}{3}$

D $5\frac{1}{9}$

Q8: Find the additive inverse of 0.7.

A 0.07

B -0.07

C 0.7

D -0.7

E 0

Q9: Find the additive inverse of -34 .

A 34

B 0

C $\frac{1}{34}$

D -34

E $-\frac{1}{34}$

Q10: What is the additive identity in \mathbb{Q} ?

A $-\frac{1}{2}$

B 1

C 0

D $\frac{1}{2}$

E -1

Q11: Find the additive inverse of $-\frac{1}{3}$.

A $\frac{1}{3}$

B 3

C $-\frac{1}{3}$

D 0

E -3

Q12: Find the additive inverse of $(-20)^0$.

A 20

B -1

C -20

D 1

Q13: What is the additive inverse of $-\frac{3}{7}$?

A -1

B $\frac{7}{3}$

C $-\frac{3}{7}$

D $\frac{3}{7}$

E $-\frac{7}{3}$

Q14: What property of addition states that the sum of any two rational numbers is always a rational number?

A The additive inverse property

B The additive identity property

C The closure property

D The commutative property

E The associative property

Q15: What property of addition is demonstrated by $\frac{2}{9} + \frac{4}{9} = \frac{4}{9} + \frac{2}{9}$?

- A The commutative property
- B The closure property
- C The associative property
- D The additive inverse property
- E The additive identity property

Q16: What property of addition is demonstrated by $\frac{1}{2} + 0 = \frac{1}{2}$?

- A The additive inverse property
- B The associative property
- C The closure property
- D The commutative property
- E The additive identity property

Q17: Which equation shows the associative property of addition?

A $\left(\frac{1}{2} + \frac{2}{3}\right) + \frac{3}{4} = \frac{1}{2} + \left(\frac{2}{3} + \frac{3}{4}\right)$

B $\frac{1}{2} + \frac{2}{3} = \frac{7}{6}$

C $\frac{2}{3} + 0 = \frac{2}{3}$

D $\frac{1}{2} + \left(-\frac{1}{2}\right) = 0$

E $\frac{1}{2} + \frac{2}{3} = \frac{2}{3} + \frac{1}{2}$

Q18: Simplify $\left(\frac{5}{13} + \frac{3}{4}\right) + \frac{1}{4}$ using the properties of addition.

A $\frac{18}{13}$

B $\frac{6}{13}$

C $\frac{5}{14}$

D $\frac{9}{21}$

E $\frac{9}{17}$

Q19: Evaluate $\left(\frac{1}{4} + \frac{3}{4}\right) + \frac{-1}{4}$.

A $\frac{1}{4}$

B $\frac{3}{4}$

C 1

D -4



Question Video

Q20: If $a = 1$, $b = 2$, $c = 3$, and $d = 4$, which of the following expressions does not result in a rational number?

A $\frac{a}{b} + \frac{b}{d+a+c}$

B $\frac{a}{b} + \frac{b}{d}$

C $\frac{2a-b}{c} + \frac{d-2b}{c}$

D $\frac{a+b}{c-(a+b)} + \frac{c+d}{d}$

E $\frac{a+b}{b} + \frac{c+d}{d}$

Q21: If $a = 1$, $b = -5$, $c = 3$, and $d = -2$, which of the following expressions does not result in a rational number?

A $\frac{a}{b} + \frac{b}{d}$

B $\frac{a+b}{c-(d-b)} + \frac{c+d}{d}$

C $\frac{2a-b}{c} + \frac{d-2b}{c}$

D $\frac{2a-b}{c+d+a} + \frac{d-2b}{c}$

E $\frac{a+b}{b} + \frac{c+d}{d}$

Q22: If $a = 5$, $b = 4$, $c = 3$, and $d = 2$, which of the following expressions has a result that is not rational?

A $\frac{\sqrt{b}}{a} + \frac{(c-a)}{d}$

B $\frac{a}{b} + \frac{b}{d}$

C $\frac{a+b}{a-(c+d)} + \frac{c+d}{d}$

D $\frac{(b+c)-(a+d)}{c} + \frac{b-2d}{c}$

E $\frac{a+b}{b} + \frac{c+d}{d}$

Q23: If $a = 3$, $b = -2$, $c = 6$, and $d = -1$, which of the following expressions has a result that is not rational?

A $\frac{2a - b}{c} + \frac{d - 2b}{c}$

B $\frac{(a + b + d)}{c} + \frac{\sqrt{(b + c)}}{a}$

C $\frac{a + b}{b} + \frac{c + d}{d}$

D $\frac{a}{b} + \frac{b}{d}$

E $\frac{a + b}{ab + c} + \frac{c + d}{d}$