

---

## Rational Numbers

1. Using appropriate properties find:

(a)  $\left[-\frac{2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5}\right] =$

(b)  $\frac{2}{5} \times \left[\frac{-3}{7} + \left(\frac{-1}{6}\right)\right] =$

2. Write the additive inverse of each of the following :

(a)  $\frac{2}{8}$     (b)  $\frac{-5}{9}$     (c)  $\frac{-6}{-5}$     (d)  $\frac{2}{-9}$     (e)  $\frac{19}{-6}$

3. Verify that  $(-x) = x$  for

(a)  $x = \frac{11}{15}$     (b)  $x = \frac{-13}{17}$

4. Find the multiplicative inverse of the following :

(a)  $-13$     (b)  $\frac{-13}{19}$     (c)  $\frac{1}{5}$     (d)  $\frac{-5}{8} \times \frac{-3}{7}$     (e)  $-1 \times \frac{-2}{5}$     (f)  $-1$

5. Name the property under multiplication used in each of the following :

(a)  $\frac{-4}{5} \times 1 = 1 \times \frac{-4}{5}$

5. Name the property under multiplication used in each of the following:

(a)  $\frac{-4}{5} \times 1 = 1 \times \frac{-4}{5} = \frac{-4}{5}$     (b)  $\frac{-13}{17} \times \frac{-2}{7} = \frac{-2}{7} \times \frac{-13}{17}$

(c)  $\frac{-19}{29} \times \frac{29}{-19} = 1$

6. Multiply  $\frac{6}{13}$  by the reciprocal of  $\frac{-7}{16}$

7. Tell what property allows you to compute  $\frac{1}{3} \times \left[6 \times \frac{4}{3}\right]$  as  $\left[\frac{1}{3} \times 6\right] \times \frac{4}{3}$

8. Is  $\frac{8}{9}$  the multiplicative inverse of  $-1 \left[\frac{1}{8}\right]$ ? Why or why not?

---

9. Is 0.3 the multiplicative inverse of  $3\frac{1}{3}$ ? Why or why not?

10. Write:

- (a) The rational number that does not have a reciprocal.
- (b) The rational numbers those which are equal to their reciprocals.
- (c) The rational number that is equal to its negative.

11. Fill in the blanks:

- (a) Zero has \_\_\_\_\_ reciprocal.
- (b) The numbers \_\_\_\_\_ and \_\_\_\_\_ are their own reciprocals.
- (c) The reciprocal of -5 is \_\_\_\_\_
- (d) Reciprocal of  $1/x$ , where  $x \neq 0$  is \_\_\_\_\_
- (e) The product of two rational number is always a \_\_\_\_\_
- (f) The reciprocal of a positive rational number is \_\_\_\_\_

12. Represent these numbers on a number line:

(a)  $\frac{7}{4}$                       (b)  $\frac{-5}{6}$

13. Represent  $\frac{-2}{11}$ ,  $\frac{-5}{11}$ ,  $\frac{-9}{11}$  on the number line.

14. Write five rational numbers which are smaller than 2.

15. Find ten rational numbers between  $\frac{-2}{5}$  and  $\frac{1}{2}$

16. Find five rational numbers between:

(a)  $\frac{2}{3}$  and  $\frac{4}{5}$             (b)  $\frac{-3}{2}$  and  $\frac{5}{3}$             (c)  $\frac{1}{4}$  and  $\frac{1}{2}$

17. Write five rational numbers greater than  $-2$

---

18. Find ten rational numbers between  $\frac{3}{5}$  and  $\frac{3}{4}$

19. Find  $\frac{3}{7} + \left[ \frac{-6}{11} \right] + \left[ \frac{-8}{21} \right] + \frac{5}{22}$

20. Find  $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left[ \frac{-14}{9} \right]$

21. Write the additive inverse of the following:

(a)  $\frac{-7}{19}$       (b)  $\frac{21}{112}$

22. Verify that  $-(-x)$  is the same as  $x$  for:

(a)  $x = \frac{13}{7}$       (b)  $x = \frac{-21}{31}$

23. Find  $\frac{2}{5} - \frac{3}{7} - \frac{1}{14} - \frac{3}{7} \times \frac{3}{5}$

24. Write any three rational numbers between  $-2$  and  $0$

25. Find any ten rational numbers between  $\frac{-5}{6}$  and  $\frac{5}{8}$

26. Find a rational number between  $\frac{1}{4}$  and  $\frac{1}{2}$

27. Find three rational numbers between  $\frac{1}{4}$  and  $\frac{1}{2}$