



# MATHS

## BOOKS - PSEB

### RATIONAL NUMBERS

#### Example

1. Find  $\frac{3}{7} + \left(\frac{-6}{11}\right) + \left(\frac{-8}{21}\right) + \left(\frac{5}{22}\right)$



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2. Find  $\frac{-4}{5} \times \frac{3}{7} \times \frac{15}{16} \times \left( \frac{-14}{9} \right)$



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3. Write the additive inverse of the following:

$$\frac{-7}{19}$$



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4. Write the additive inverse of the following:

$$\frac{21}{112}$$



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

$$x = \frac{13}{17}$$



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

$$x = \frac{-21}{31}$$



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



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8. Write any 3 rational numbers between  $-2$  and  $0$ .



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





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



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



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Exercise

1. Using appropriate properties find :

$$-\frac{2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \times \frac{1}{6}$$



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2. Using appropriate properties find :

$$\frac{2}{5} \times \left( -\frac{3}{7} \right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{14} \times \frac{2}{5}$$



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3. Write the additive inverse of each of the following .  $\frac{2}{-9}$



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4. Write the additive inverse of each of the following .  $\frac{-5}{9}$



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5. Write the additive inverse of each of the following .  $\frac{-6}{-5}$



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6. Write the additive inverse of each of the following .  $\frac{2}{-9}$



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7. Write the additive inverse of each of the following .  $\frac{19}{-6}$



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8. Verify that  $-(-x) = x$  for  $x = \frac{11}{15}$



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9. Verify that  $-(-x) = x$  for  $x = -\frac{13}{17}$



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10. Find the multiplicative inverse of the following : -13



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11. Find the multiplicative inverse of the following :  $\frac{-13}{19}$



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**12.** Find the multiplicative inverse of the following :  $\frac{1}{5}$



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**13.** Find the multiplicative inverse of the following :  $\frac{-5}{8} \times \frac{-3}{7}$



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**14.** Find the multiplicative inverse of the following :  $-1 \times \frac{-2}{5}$



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**15.** Find the multiplicative inverse of the following : -1



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**16.** Name the property under multiplication used in each of the following.

$$\frac{-4}{5} \times 1 = 1 \times \frac{-4}{5} = -\frac{4}{5}$$



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**17.** Name the property under multiplication used in each of the following.

$$-\frac{13}{17} \times \frac{-2}{7} = \frac{-2}{7} \times \frac{-13}{17}$$



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**18.** Name the property under multiplication used in each of the following.

$$\frac{-19}{29} \cdot \frac{29}{-19} = 1$$



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



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20. Tell what property allows you to compute

$$\frac{1}{3} \times \left( 6 \times \frac{4}{3} \right) \text{ as } \left( \frac{1}{3} \times 6 \right) \times \frac{4}{3}$$



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21. Is  $\frac{8}{9}$  the multiplicative inverse of  $-1\frac{1}{8}$ ?

Why or why not?



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



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**23.** The rational number that does not have a reciprocal.



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**24.** The rational numbers that are equal to their reciprocals.



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**25.** The rational number that is equal to its negative.



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26. Fill in the blanks : Zero has \_\_\_\_\_  
reciprocal.



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27. Fill in the blanks : The numbers \_\_\_\_\_ and  
\_\_\_\_\_ are their own reciprocals



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28. Fill in the blanks : The reciprocal of  $-5$  is \_\_\_\_\_.



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29. Fill in the blanks : Reciprocal of  $\frac{1}{x}$ , where  $x \neq 0$  is \_\_\_\_\_.



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**30.** Fill in the blanks : The product of two rational numbers is always a \_\_\_\_\_.



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**31.** Fill in the blanks : The reciprocal of a positive rational number is \_\_\_\_\_.



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**32.** Represent these numbers on the number

line.  $\frac{7}{4}$



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**33.** Represent these numbers on the number

line.  $\frac{-5}{6}$



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



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**35.** Write five rational numbers which are smaller than 2.



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



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**37.** Find five rational numbers between  $\frac{2}{3}$  and  $\frac{4}{5}$



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**38.** Find five rational numbers between  $\frac{-3}{2}$  and  $\frac{5}{3}$



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**39.** Find five rational numbers between  $\frac{1}{4}$  and  $\frac{1}{2}$



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40. Write five rational numbers greater than -2.



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



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