Division of Rational Numbers

A. Write the Missing Terms to Complete the Sentences:

1. To divide a rational number by another, we multiply the first number by the _____ of the second.
2. The reciprocal of $-\frac{3}{7}$ is _____.
3. $\frac{5}{6} \div (-\frac{2}{3})$ = _____.
4. Division of a rational number by 1 gives _____.
5. Division by 0 is _____.

B. Mark each sentence with a True (✔) or False (✘):

1. Division of rational numbers is the same as multiplication by the reciprocal. ☐
2. Rational numbers are closed under division. ☐
3. The reciprocal of a positive rational number is always positive. ☐
4. $(-\frac{4}{9}) \div (\frac{2}{3}) = (-\frac{4}{9}) \times (\frac{3}{2})$. ☐
5. 0 ÷ any non-zero rational number is undefined. ☐

C. Challenge yourself with these questions:

1. A container has $\frac{3}{4}$ liters of milk. If each cup holds $\frac{1}{8}$ liter, how many cups can be filled?
2. A rope of length $\frac{5}{6}$ meters is cut into pieces of $\frac{1}{12}$ meters each. How many pieces are formed?
3. If $\frac{2}{3}$ of a chocolate bar is divided equally among 4 students, how much does each student get?
4. A tank holds $\frac{7}{8}$ of a liter of water. If $\frac{1}{4}$ liter is poured out each time, how many times can water be poured out before it is empty?
5. Calculate $(-\frac{3}{5}) \div (\frac{6}{7})$. Show all the steps and explain why we multiply by the reciprocal.