8.5 Divide Fractions by Fractions

Blake has ¾ cup of vinegar to make a homemade cleaner that saves money and is non-toxic. How many batches of cleaner can he make if he uses ⅛ cup of vinegar in each batch?

¾ divided by ⅛

Option 1: Divide with a model

Option 2: Multiply by the Reciprocal

Keep Change Flip

¾   x   8/1

Practice Together:

⅓ by ⅙

7/24 by 7/12

$$\frac{1}{3} \div \frac{1}{6}$$

$$\frac{1}{3} \cdot \frac{6}{1} = \frac{6 \div 3}{3 \div 3} = \frac{2}{1}$$

$$= \boxed{2}$$

$$\frac{7}{24} \div \frac{7}{12}$$

$$\frac{7}{24} \qquad \frac{12}{7} = \frac{1}{2} \cdot \frac{1}{1}$$

$$= \boxed{\frac{1}{2}}$$

Practice Together:

½ by ⅛

$$\frac{1}{2} \div \frac{1}{8} = \frac{1}{1} \cdot \frac{4}{1} = \frac{4}{1}$$

$$= \boxed{4}$$

3/22 by 3/11

$$\frac{3}{22} \div \frac{3}{11} = \frac{1}{2} \cdot \frac{1}{1}$$

$$= \boxed{\frac{1}{2}}$$

Practice Together:

⅜ by ⅜

$$\frac{3}{8} \div \frac{3}{8}$$

$$= \frac{1}{1} \cdot \frac{1}{1}$$

$$= \frac{1}{1}$$

$$= \boxed{1}$$

5/9 by ⅔

$$\frac{5}{9} \div \frac{2}{3}$$

$$\frac{5}{3} \cdot \frac{1}{2} = \boxed{5}$$