

Dividing Fractions with Models and Reciprocals

Grade 6 math · Test Answer Key · Standards: 6.NS.A.1

Each solution shows the expected steps and a scoring guide. Give partial credit when the setup is correct but an arithmetic slip changes the final number.

Standards: 6.NS.A.1 · **Level:** Grade 6

Question 1 Reciprocals (2 points)

- a. $\frac{9}{5}$
- b. $\frac{1}{4}$

Scoring: 1 point for each part.

Question 2 Using a Model (2 points)

Six thirds in groups of 2 give 3 groups. Check: $2 \times \frac{3}{2} = 3$. **3.**



$$6 \div 2 = 3 \text{ groups.}$$

Scoring: 1 point for reading the model, 1 point for the answer 3.

Question 3 Dividing (2 points)

- a. $\frac{4}{5} \times \frac{3}{2} = \frac{12}{10} = 1 \frac{1}{5}$.
- b. $6 \times \frac{4}{3} = 8$.

Scoring: 1 point for each part.

Question 4 More Dividing (2 points)

- a. $\frac{3}{8} \times \frac{1}{3} = \frac{1}{8}$.
- b. $\frac{7}{10} \times \frac{5}{7} = \frac{35}{70} = \frac{1}{2}$.

Scoring: 1 point for each part.

Question 5 Mixed Numbers (2 points)

a. $10\frac{1}{3} \times \frac{9}{5} = \frac{90}{15} = \mathbf{6}$.

b. $\frac{9}{4} \times \frac{8}{9} = \frac{72}{36} = \mathbf{2}$.

Scoring: 1 point for each part.

Question 6 Dough Rolls (3 points)

a. $27\frac{1}{4} \times \frac{8}{3} = \frac{216}{12} = \mathbf{18 \text{ rolls}}$.

b. $18 \times 0.75 = \mathbf{\$13.50}$.

Scoring: 2 points for (a) (1 point for the correct setup); 1 point for (b).

Question 7 Missing Width (3 points)

$15\frac{1}{2} \div 15\frac{1}{4} = \frac{15}{2} \times \frac{4}{15} = \frac{60}{30} = 2. \mathbf{2 \text{ feet}}$.

Scoring: 1 point for converting to improper fractions, 1 point for the correct division, 1 point for the answer with units.

Question 8 Paint Sharing (3 points)

a. $\frac{5}{6} \div 4 = \frac{5}{6} \times \frac{1}{4} = \frac{5}{24} \mathbf{\text{ gallon}}$.

b. $\frac{5}{6} \times 12 = \mathbf{10 \text{ cups}}$.

Scoring: 2 points for (a), 1 point for (b).

Question 9 Explain (1 point)

Each whole holds two halves, so $5 \times 2 = \mathbf{10}$. It is greater than 5 because halves are smaller than 1, so more of them fit.

Scoring: 1 point for the answer with a correct reason.