

Grade 4 · Multiplying a Fraction by a Whole Number · Test Answer Key

Common Core 4.NF.B.4 · mathovore.fr

Use this key to score the test out of 20 points. Each solution shows the work expected, and the scoring note explains how partial credit is given. Accept equivalent fractions and correct mixed numbers.

Grade 4 Common Core: 4.NF.B.4

Question 1: Fractions as multiples (2 points)

- a. The unit fraction is $\frac{1}{6}$ and 5 parts are shaded: $5 \times \frac{1}{6}$.
- b. $9 \times \frac{1}{10}$.

Scoring: 1 point for each part. Give no point if the unit fraction or the count is wrong.

Question 2: Whole number times fraction (2 points)

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

Scoring: 1 point for each part. Accept the improper fraction ($\frac{6}{5}$ or $\frac{12}{10}$) or the mixed number.

Question 3: Products as mixed numbers (2 points)

- a. $5 \times \frac{3}{4} = \frac{15}{4} = 3\frac{3}{4}$. Answer: $3\frac{3}{4}$.
- b. $3 \times \frac{5}{6} = \frac{15}{6} = 2\frac{3}{6} = 2\frac{1}{2}$. Answer: $2\frac{1}{2}$.

Row 1	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Row 2	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Row 3	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Row 4	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$
Row 5	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

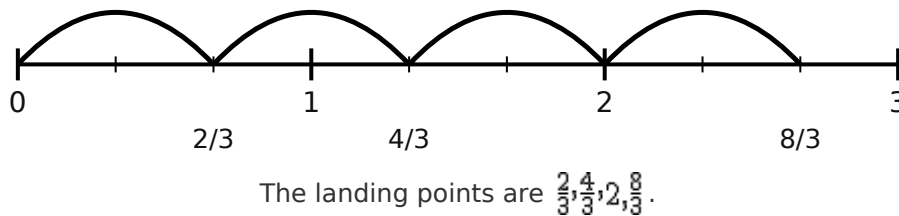
Model for part a: five rows of $\frac{3}{4}$.

Scoring: 1 point for each part: 0.5 for the correct improper fraction, 0.5 for the correct mixed

number.

Question 4: Hops on a number line (2 points)

- a. Each hop is $\frac{2}{3}$ long: $4 \times \frac{2}{3} = \frac{8}{3}$.
- b. $2\frac{2}{3}$, since $\frac{6}{3} = 2$ and 2 thirds remain.



Scoring: 1 point for each part.

Question 5: Find the error (2 points)

- a. She multiplied the denominator by 3. The pieces stay fifths, so only the numerator is multiplied.
- b. $\frac{6}{5} = 1\frac{1}{5}$.

Scoring: 1 point for saying the denominator should stay the same; 1 point for the correct product in either form.

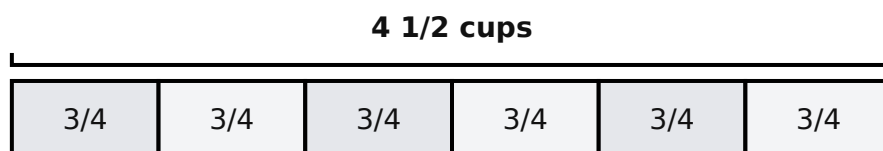
Question 6: Compare products (2 points)

- a. $\frac{1}{28}$ and $\frac{1}{58}$: $\frac{1}{28} < \frac{1}{58}$.
- b. $6 \times \frac{1}{3} = \frac{6}{3} = 2$ and $2 \times \frac{3}{3} = \frac{6}{3} = 2$: =.

Scoring: 1 point for each correct symbol with correct products.

Question 7: Trail mix (3 points)

- a. $6 \times \frac{3}{4} = \frac{18}{4} = 4\frac{2}{4} = 4\frac{1}{2}$. Answer: $4\frac{1}{2}$ cups.
- b. $4\frac{1}{2}$ is more than 4, so she does not have enough. $4\frac{1}{2} - 4 = \frac{1}{2}$. She needs $\frac{1}{2}$ cup more.



Six batches need $4\frac{1}{2}$ cups.

Scoring: Part a: 1 point. Part b: 1 point for saying no with a comparison, 1 point for the

difference $\frac{1}{2}$ cup.

Question 8: Running log (3 points)

- a. $4 \times \frac{7}{10} = \frac{28}{10} = 2\frac{8}{10} = 2\frac{4}{5}$. $2\frac{8}{10}$ miles.
- b. $3 \times \frac{9}{10} = \frac{27}{10} = 2\frac{7}{10}$. $2\frac{7}{10}$ miles.
- c. $\frac{28}{10} - \frac{27}{10} = \frac{1}{10}$. **Noah runs $\frac{1}{10}$ mile farther.**

Scoring: 1 point for each part. Accept equivalent forms such as $2\frac{4}{5}$.

Question 9: Missing numbers (2 points)

- a. $12 \div 4 = 3$. $\frac{3}{5}$.
- b. $7 \times \frac{5}{12} = \frac{35}{12} = 2\frac{11}{12}$. $2\frac{11}{12}$.

Scoring: 1 point for each part.

Total
20 points