

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

Common Core 4.NF.B.4a, 4.NF.B.4b, 4.NF.B.4c · maths-pdf.fr/en/

Use this answer key and scoring guide to grade the test. Each solution shows the multiplication and the mixed number, and the scoring notes explain partial credit out of 20 points.

Grade 4 · Common Core State Standards: **4.NF.B.4a, 4.NF.B.4b, 4.NF.B.4c**

Question 1 - Unit fractions [2 pts]

(a) Each shaded part is $\frac{1}{6}$, and there are 5 of them.



$$5/6 = 5 \times 1/6$$

Five copies of $\frac{1}{6}$.

(b) Five parts of $\frac{1}{6}$ added together.

(a) $5 \times \frac{1}{6}$ **(b)** $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$

Scoring: 1 point for each part.

Question 2 - Unit fraction products [2 pts]

(a) $3 \times 1 = 3$, so $\frac{3}{8}$.

(b) $\frac{7}{5} = 1\frac{2}{5}$.

(a) $\frac{3}{8}$ **(b)** $\frac{7}{5} = 1\frac{2}{5}$

Scoring: 1 point for each part.

Question 3 - Multiply by a fraction [2 pts]

$$4 \times 3 = 12, \text{ so } \frac{12}{5}.$$

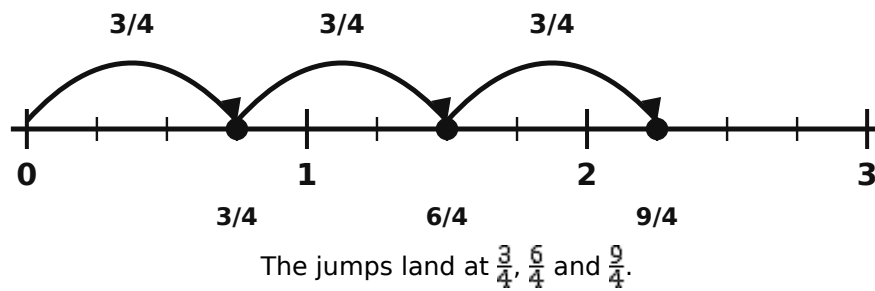
$$12 \div 5 = 2 \text{ remainder } 2.$$

$$\frac{12}{5} = 2\frac{2}{5}$$

Scoring: 1 point for the fraction; 1 point for the mixed number.

Question 4 - Jumps on a number line [2 pts]

There are 3 jumps and each jump is $\frac{3}{4}$.



$$3 \times \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}.$$

$$3 \times \frac{3}{4} = \frac{9}{4}, \text{ or } 2\frac{1}{4}$$

Scoring: 1 point for the equation; 1 point for the product.

Question 5 - Larger product [2 pts]

$$8 \times 5 = 40, \text{ so } \frac{40}{12}.$$

$$40 \div 12 = 3 \text{ remainder } 4.$$

$$3\frac{4}{12}$$

Scoring: 1 point for $\frac{40}{12}$; 1 point for the mixed number.

Question 6 - Morning runs [3 pts]

(a) $4 \times \frac{5}{6} = \frac{20}{6}.$

(b) $20 \div 6 = 3 \text{ remainder } 2, \text{ so } 3\frac{2}{6}.$

(c) $3\frac{2}{6}$ is greater than 3.

(a) $4 \times \frac{5}{6} = \frac{20}{6}$ **(b)** $3\frac{2}{6}$ miles **(c)** yes

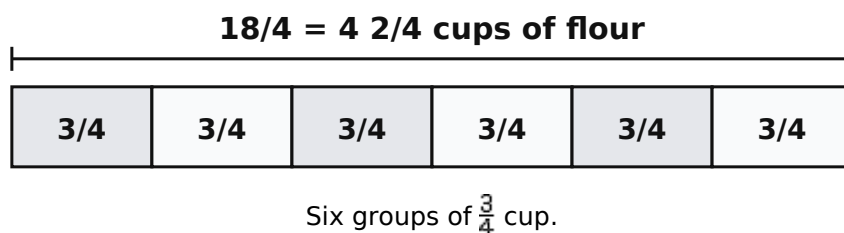
Scoring: 1 point for each part.

Question 7 - Batches of muffins [3 pts]

(a) $6 \times \frac{3}{4} = \frac{18}{4}$.

(b) $18 \div 4 = 4$ remainder 2, so $4\frac{2}{4}$.

(c) $5 = \frac{20}{4}$ and $\frac{20}{4} - \frac{18}{4} = \frac{2}{4}$.



(a) $6 \times \frac{3}{4} = \frac{18}{4}$ **(b)** $4\frac{2}{4}$ cups **(c)** $\frac{2}{4}$ cup

Scoring: 1 point for each part.

Question 8 - Products for nine fourths [2 pts]

$\frac{9}{4} = 9 \times \frac{1}{4}$ and $\frac{9}{4} = 3 \times \frac{3}{4}$.

$9 \times \frac{1}{4}$ and $3 \times \frac{3}{4}$

Scoring: 1 point for each correct product.

Question 9 - Diego's mistake [2 pts]

Diego multiplied the denominator by 3. The denominator names the size of the pieces, and it does not change. Only the number of pieces changes: $3 \times 2 = 6$ fifths.

$3 \times \frac{2}{5} = \frac{6}{5}$

Scoring: 1 point for the explanation; 1 point for $\frac{6}{5}$.

Total
20 points