

Grade 5 · Multiplying Fractions · Test Answer Key

Common Core 5.NF.B.3, 5.NF.B.4, 5.NF.B.5, 5.NF.B.6 · mathovore.fr

This answer key shows full worked solutions and how the 20 points are awarded. Use the scoring notes to give partial credit when the method is right but the arithmetic has a slip.

Grade 5 Common Core: 5.NF.B.3 · 5.NF.B.4 · 5.NF.B.5 · 5.NF.B.6

Question 1: Division and fractions (2 points)

- a. $9 \div 4 = \frac{9}{4} = 2\frac{1}{4}$
b. $3 \div 5 = \frac{3}{5}$ pound

Scoring: 1 point for each part. Give the point for $\frac{9}{4}$ only if it is converted to a mixed number.

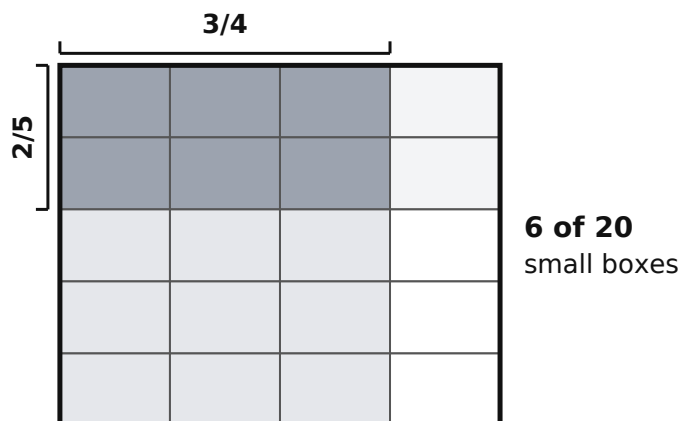
Question 2: Whole numbers and fractions (2 points)

- a. $5 \times \frac{3}{10} = \frac{15}{10} = \frac{3}{2} = 1\frac{1}{2}$
b. $\frac{7}{12} \times 8 = \frac{56}{12} = \frac{14}{3} = 4\frac{2}{3}$

Scoring: 1 point per part for a correct simplified answer. If the product is correct but not simplified or not converted to a mixed number, award no more than half the point and round the question total down.

Question 3: Reading an area model (2 points)

- a. $\frac{3}{4} \times \frac{2}{5}$
b. The darkest part is 6 of 20 boxes: $\frac{6}{20} = \frac{3}{10}$



Darkest region: 6 of 20 boxes.

Scoring: 1 point for a correct sentence (either order of factors). 1 point for $\frac{3}{10}$.

Question 4: Multiplying fractions (2 points)

- a. $\frac{4}{9} \times \frac{3}{8} = \frac{12}{72} = \frac{1}{6}$
b. $\frac{5}{6} \times \frac{9}{10} = \frac{45}{60} = \frac{3}{4}$

Scoring: 1 point for each correct simplified product.

Question 5: Area of a rectangle (2 points)

- a. $\frac{7}{8} \times \frac{2}{3} = \frac{14}{24} = \frac{7}{12}$ square foot
b. Both rectangles have the same height, and $1\frac{1}{4} > \frac{7}{8}$. Rectangle B is wider, so its area is greater. (Area of B: $\frac{5}{4} \times \frac{2}{3} = \frac{10}{12} = \frac{5}{6}$, and $\frac{5}{6} > \frac{7}{12}$.)

Scoring: Part a: 1 point for $\frac{7}{12}$ with units. Part b: 1 point for 'greater' with a valid reason (wider with equal height, or the computed areas).

Question 6: Size of a product (2 points)

- a. $\frac{3}{4} < 1$, so the product is less than $\frac{2}{3}$: <
b. $1\frac{3}{8} > 1$, so the product is greater than 6: >

Scoring: 1 point per correct symbol. A correct symbol with a wrong explanation still earns the point.

Question 7: Mixed number products (2 points)

- a. $\frac{5}{2} \times \frac{8}{5} = \frac{40}{10} = 4$
b. $\frac{10}{3} \times \frac{9}{4} = \frac{90}{12} = \frac{15}{2} = 7\frac{1}{2}$

Scoring: 1 point per part. No point if the whole numbers and fractions are multiplied separately.

Question 8: Hiking trail (3 points)

- a. $2\frac{1}{4} = \frac{9}{4}$. $\frac{2}{3} \times \frac{9}{4} = \frac{18}{12} = \frac{3}{2} = 1\frac{1}{2}$ miles
b. $\frac{9}{4} - \frac{3}{2} = \frac{9}{4} - \frac{6}{4} = \frac{3}{4}$ mile



Two of three equal parts are hiked; each part is $\frac{3}{4}$ mile.

Scoring: Part a: 1 point for converting to $\frac{9}{4}$ and setting up the product, 1 point for $1\frac{1}{2}$. Part b: 1 point for $\frac{3}{4}$ (follow-through allowed).

Question 9: Ribbon for a project (3 points)

- a. $\frac{2}{3} \times \frac{9}{2} = \frac{18}{6} = 3$ yards
b. Rest: $\frac{9}{2} - 3 = \frac{3}{2}$ yards. $\frac{5}{6} \times \frac{3}{2} = \frac{15}{12} = \frac{5}{4} = 1\frac{1}{4}$ yards
c. $\frac{3}{2} - \frac{5}{4} = \frac{6}{4} - \frac{5}{4} = \frac{1}{4}$ yard

Scoring: 1 point per part; follow-through is allowed from an earlier error if the method is correct.

Total
20 points