Fraction Multiplication

Use this key to check answers and read the explanations.

1. What is 3 × 1/7?
   A. 3/7
   B. 1/21
   C. 3/21
   D. 1/10
   Correct answer: A. 3/7
   Three groups of one seventh make three sevenths.

2. What is 2/3 × 3/8 in simplest form?
   A. 2/9
   B. 5/11
   C. 1/4
   D. 3/4
   Correct answer: C. 1/4
   Multiply the numerators and denominators. The result is 6/24, which simplifies to 1/4.

3. What is the product of 4/9 and 9/4?
   A. 4/9
   B. 1
   C. 16/81
   D. 13/36
   Correct answer: B. 1
   These fractions are reciprocals. Their product is 36/36, or one.

4. A box has 35 cards. A team takes 2/5 of them. How many cards does it take?
   A. 21
   B. 7
   C. 10
   D. 14
   Correct answer: D. 14
   One fifth is 35 divided by 5, or 7. Two fifths equal twice that amount.

5. A container holds 5/6 cup of oats. You use half the oats. How much do you use?
   A. 5/6 cup
   B. 5/12 cup
   C. 1/3 cup
   D. 1 2/3 cups
   Correct answer: B. 5/12 cup
   Multiply the amount by 1/2 to get 5/12 cup.

6. What is 5/14 × 7/15 in simplest form?
   A. 1/6
   B. 1/3
   C. 1/2
   D. 5/42
   Correct answer: A. 1/6
   Reduce 7 with 14 and 5 with 15. The remaining product is 1/2 × 1/3 = 1/6.

7. What is 1 1/3 × 3/8?
   A. 1 1/8
   B. 3/8
   C. 3/4
   D. 1/2
   Correct answer: D. 1/2
   Rewrite 1 1/3 as 4/3. Then multiply by 3/8 and simplify 4/8 to 1/2.

8. A rectangular sign is 5/6 meter wide and 3/4 meter high. What is its area?
   A. 3/8 square meter
   B. 2/3 square meter
   C. 5/8 square meter
   D. 7/12 square meter
   Correct answer: C. 5/8 square meter
   Multiply the two side lengths. The area is 15/24 square meter, which simplifies to 5/8.

9. A full batch needs 2 2/3 cups of flour. How much does a three-quarter batch need?
   A. 2 cups
   B. 1 1/2 cups
   C. 2 1/3 cups
   D. 3 5/9 cups
   Correct answer: A. 2 cups
   Convert 2 2/3 to 8/3 and multiply by 3/4. The product is 8/4, or 2 cups.

10. How does 11/8 × 9/10 compare with 11/8?

A. It must be zero.
B. It is larger than 11/8.
C. It is equal to 11/8.
D. It is smaller than 11/8.

Correct answer: D. It is smaller than 11/8.
Multiplying a positive amount by a positive fraction less than one produces a smaller positive amount.

11. What is 1 3/5 × 2 1/4 in simplest mixed-number form?

A. 2 3/20
B. 3 1/5
C. 3 3/5
D. 4 1/20

Correct answer: C. 3 3/5
Convert to 8/5 and 9/4. The product is 72/20 or 18/5, which is 3 3/5.

12. A roll starts 2 2/5 meters long. Three quarters of the roll is set aside, and a student takes two thirds of the part set aside. How much does the student take?

A. 4/5 meter
B. 1 1/5 meters
C. 1 4/5 meters
D. 2 1/5 meters

Correct answer: B. 1 1/5 meters
The student takes 3/4 × 2/3, or one half, of the total roll. Half of 12/5 meters is 6/5 meters.

13. A number times 4/7 equals 6/35. What is the number?

A. 21/40
B. 24/245
C. 3/5
D. 3/10

Correct answer: D. 3/10
Multiply both sides by the reciprocal 7/4. This gives 42/140, which simplifies to 3/10.

14. How can you simplify 14/15 × 25/28 before multiplying?

A. Reduce 14 with 28 and 25 with 15, then multiply 1/3 × 5/2.
B. Divide both numerators by 5 and leave both denominators unchanged.
C. Cancel 14 against 25 because both are numerators.
D. Subtract 15 from 25 and multiply 10 by the two remaining numbers.

Correct answer: A. Reduce 14 with 28 and 25 with 15, then multiply 1/3 × 5/2.
The product is one fraction whose numerator is 14 × 25 and denominator is 15 × 28. Reduce common factors across numerator and denominator to get 5/6.

15. A rectangle is 1 3/4 meters by 2 2/7 meters. A copy scales both lengths by 5/6. What is the copy’s area?

A. 3 5/9 square meters
B. 3 1/3 square meters
C. 2 7/9 square meters
D. 4 square meters

Correct answer: C. 2 7/9 square meters
The original area is 7/4 × 16/7 = 4. Scaling both lengths scales area by 25/36, so the copy has area 100/36 or 2 7/9 square meters.