

# Grade 5 · Dividing Unit Fractions and Whole Numbers · Worksheet Answer Key

Common Core 5.NF.B.7 · mathovore.fr

Every solution shows the division equation, the multiplication check and the final answer. Compare your model as well as your answer. When a problem counts pieces, the answer is a whole number; when it splits a fraction, the answer is a smaller unit fraction.

## Grade 5 Common Core: 5.NF.B.7

### Problem 1: Half split in three

The shaded half is split into 3 pieces, and each piece is 1 of the 6 equal parts:  $\frac{1}{2} \div 3 = \frac{1}{2 \times 3} = \frac{1}{6}$ .  
Check:  $3 \times \frac{1}{6} = \frac{1}{2}$ .



Each small piece is  $\frac{1}{6}$  of the whole.

Answer:  $\frac{1}{6}$

### Problem 2: Fourths split in two

$\frac{1}{4} \div 2 = \frac{1}{4 \times 2} = \frac{1}{8}$ . Check:  $2 \times \frac{1}{8} = \frac{1}{4}$ .

Answer:  $\frac{1}{8}$

### Problem 3: Fifths split in three

$\frac{1}{5} \div 3 = \frac{1}{5 \times 3} = \frac{1}{15}$ . Check:  $3 \times \frac{1}{15} = \frac{1}{5}$ .

Answer:  $\frac{1}{15}$

### Problem 4: More unit fraction quotients

- a.  $\frac{1}{6 \times 4} = \frac{1}{24}$
- b.  $\frac{1}{8 \times 2} = \frac{1}{16}$

c.  $\frac{1}{10 \times 5} = \frac{1}{50}$

Answers:  $\frac{1}{24}$ ,  $\frac{1}{16}$ ,  $\frac{1}{50}$

### Problem 5: Check by multiplying

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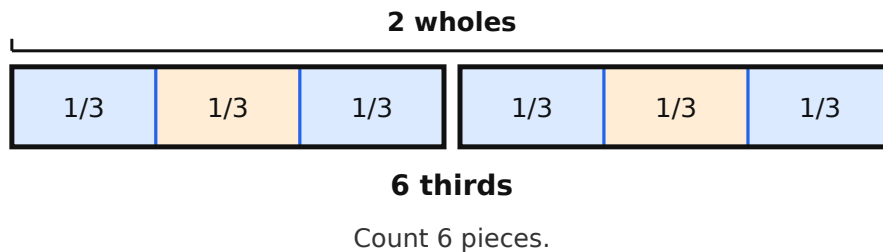
Multiply the quotient by the divisor:  $\frac{1}{12} \times 3 = \frac{3}{12} = \frac{1}{4}$ . The product is the starting number, so Maya is right.

Answer: **yes**,  $\frac{1}{12} \times 3 = \frac{1}{4}$

### Problem 6: Wholes and thirds

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Each whole holds 3 thirds, so 2 wholes hold  $2 \times 3 = 6$  thirds. Check:  $6 \times \frac{1}{3} = 2$ .



Answer: **6**

### Problem 7: Wholes and fourths

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$3 \times 4 = 12$  fourths. Check:  $12 \times \frac{1}{4} = 3$ .

Answer: **12**

### Problem 8: Dividing by one half

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- a.  $5 \times 2 = 10$
- b.  $7 \times 2 = 14$

Each whole holds 2 halves.

Answers: **10 and 14**

### Problem 9: Whole numbers by unit fractions

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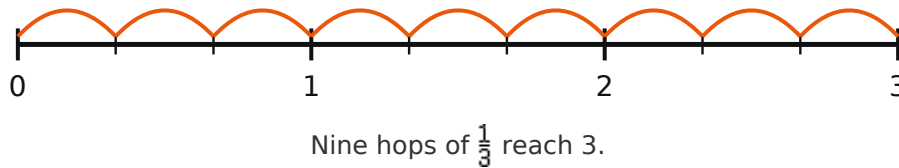
- a.  $6 \times 5 = 30$
- b.  $9 \times 3 = 27$
- c.  $8 \times 10 = 80$

Answers: **30, 27, 80**

### Problem 10: Hops on a number line

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There are 3 thirds in each whole, so  $3 \div \frac{1}{3} = 3 \times 3 = 9$  hops.

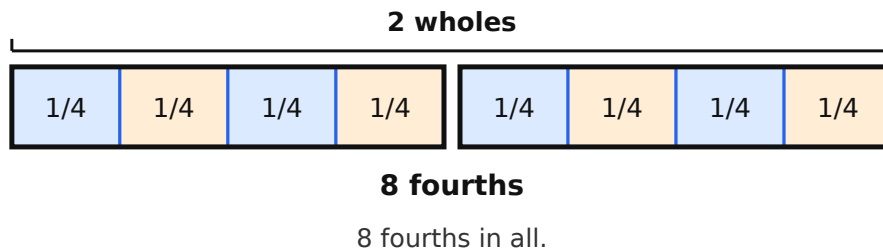


Answer:  $3 \div \frac{1}{3} = 9$

### Problem 11: Write the division equation

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Two wholes are cut into fourths:  $2 \div \frac{1}{4} = 2 \times 4 = 8$ .



Answer:  $2 \div \frac{1}{4} = 8$

### Problem 12: Name the unit fraction

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The shaded third is split into 2 equal pieces:  $\frac{1}{3} \div 2 = \frac{1}{6}$ . Check:  $2 \times \frac{1}{6} = \frac{1}{3}$ .

Answer:  $\frac{1}{3} \div 2 = \frac{1}{6}$

### Problem 13: Missing divisor, unit fractions

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a.  $5 \times 4 = 20$ , so the divisor is 4. Check:  $\frac{1}{5} \div 4 = \frac{1}{20}$ .

b.  $3 \times 6 = 18$ , so the divisor is 6. Check:  $\frac{1}{3} \div 6 = \frac{1}{18}$ .

Answers: **4 and 6**

### Problem 14: Missing number, whole numbers

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a.  $6 \div \frac{1}{4} = 6 \times 4 = 24$ , so the missing number is  $\frac{1}{4}$ .

b.  $7 \times 5 = 35$ , so the missing number is 7.

Answers:  $\frac{1}{4}$  and 7

### Problem 15: Compare two quotients

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$\frac{1}{2} \div 4 = \frac{1}{8}$  and  $4 \div \frac{1}{2} = 8$ . Since  $8 > \frac{1}{8}$ , the second quotient is greater.

Answer:  $4 \div \frac{1}{2}$  is greater

### Problem 16: Pattern with fourths

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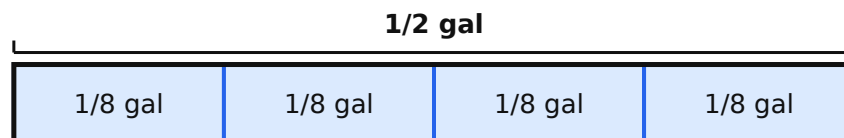
$1 \div \frac{1}{4} = 4$ ,  $2 \div \frac{1}{4} = 8$ ,  $3 \div \frac{1}{4} = 12$ ,  $4 \div \frac{1}{4} = 16$ . Each answer is the whole number times 4, because each whole holds 4 fourths.

Answer: **4, 8, 12, 16; multiply by 4**

### Problem 17: Lemonade jugs

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The lemonade is split:  $\frac{1}{2} \div 4 = \frac{1}{8}$ . Check:  $4 \times \frac{1}{8} = \frac{1}{2}$ .



Each jug holds one eighth gallon.

Answer:  $\frac{1}{8}$  gallon

### Problem 18: Leftover pizza

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$\frac{1}{3} \div 2 = \frac{1}{6}$ . Check:  $2 \times \frac{1}{6} = \frac{1}{3}$ .

Answer:  $\frac{1}{6}$  of the pizza

### Problem 19: Ribbon bows

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$3 \div \frac{1}{4} = 3 \times 4 = 12$ . Check:  $12 \times \frac{1}{4} = 3$ .

Answer: **12 pieces**

### Problem 20: Rice servings

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$6 \div \frac{1}{3} = 6 \times 3 = 18$ . Check:  $18 \times \frac{1}{3} = 6$ .

Answer: **18 servings**

### Problem 21: Chocolate bar

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$$\frac{1}{4} \div 5 = \frac{1}{20}. \text{ Check: } 5 \times \frac{1}{20} = \frac{1}{4}.$$

Answer:  $\frac{1}{20}$  **pound**

### Problem 22: Birdseed

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$$\text{Feeders: } 3 \div \frac{1}{2} = 3 \times 2 = 6. \text{ Sunflower seeds in each feeder: } \frac{1}{4} \div 6 = \frac{1}{24}. \text{ Check: } 6 \times \frac{1}{24} = \frac{1}{4}.$$

Answer:  $\frac{1}{24}$  **pound**