

# Fractions with Denominators 10 and 100

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 24

## Q Quick Review

A fraction with a denominator of 10 counts **tenths**, and a fraction with a denominator of 100 counts **hundredths**. Since 10 tenths and 100 hundredths both make one whole, you can rename any tenth as hundredths: just multiply the top and bottom by 10. For example,  $\frac{3}{10} = \frac{30}{100}$ . This trick lets you **add** a tenths fraction and a hundredths fraction — first change the tenths into hundredths so both fractions have the **same denominator**, then add the numerators. So  $\frac{3}{10} + \frac{4}{100} = \frac{30}{100} + \frac{4}{100} = \frac{34}{100}$ .

◇ **Example:** Find  $\frac{6}{10} + \frac{3}{100}$ .

⇒ The two fractions have different denominators, so let's make them match. Tenths are bigger pieces than hundredths, so change  $\frac{6}{10}$  into hundredths by multiplying the top and bottom by 10:  $\frac{6}{10} = \frac{60}{100}$ . Now both fractions count hundredths, so add the numerators:  $\frac{60}{100} + \frac{3}{100} = \frac{63}{100}$ . That is sixty-three hundredths.

**Answer:**  $\frac{63}{100}$

## PRACTICE

Rename or add. Write each answer as a fraction with denominator 100.

- |   |       |                                     |       |
|---|-------|-------------------------------------|-------|
| 1. $\frac{3}{10} = \frac{\square}{100}$   | _____ | 11. $\frac{3}{10} + \frac{4}{100}$  | _____ |
| 2. $\frac{7}{10} = \frac{\square}{100}$   | _____ | 12. $\frac{2}{10} + \frac{7}{100}$  | _____ |
| 3. $\frac{5}{10} = \frac{\square}{100}$   | _____ | 13. $\frac{5}{10} + \frac{1}{100}$  | _____ |
| 4. $\frac{1}{10} = \frac{\square}{100}$   | _____ | 14. $\frac{6}{10} + \frac{3}{100}$  | _____ |
| 5. $\frac{9}{10} = \frac{\square}{100}$   | _____ | 15. $\frac{1}{10} + \frac{9}{100}$  | _____ |
| 6. $\frac{4}{10} = \frac{\square}{100}$   | _____ | 16. $\frac{4}{10} + \frac{25}{100}$ | _____ |
| 7. $\frac{6}{10} = \frac{\square}{100}$   | _____ | 17. $\frac{7}{10} + \frac{12}{100}$ | _____ |
| 8. $\frac{8}{10} = \frac{\square}{100}$   | _____ | 18. $\frac{8}{10} + \frac{5}{100}$  | _____ |
| 9. $\frac{2}{10} = \frac{\square}{100}$   | _____ | 19. $\frac{2}{10} + \frac{36}{100}$ | _____ |
| 10. $\frac{10}{10} = \frac{\square}{100}$ | _____ | 20. $\frac{9}{10} + \frac{8}{100}$  | _____ |

## ◆ Word Problems

21. Amir colored  $\frac{6}{10}$  of a poster red and another  $\frac{30}{100}$  of it blue. What fraction of the poster did he color in all? Write it in hundredths.  
\_\_\_\_\_
22. A water bottle is  $\frac{4}{10}$  full. Mia wants to write that amount as a fraction with a denominator of 100. What should she write?  
\_\_\_\_\_
23. On a math quiz, Jenna earned  $\frac{2}{10}$  of the points on the first part and  $\frac{45}{100}$  of the points on the second part. What fraction of the points did she earn altogether? \_\_\_\_\_
24. Leo ran  $\frac{7}{10}$  of a kilometer in the morning and  $\frac{15}{100}$  of a kilometer after lunch. How far did he run in all? Write your answer in hundredths. \_\_\_\_\_



## Answer Keys

1.  $\frac{30}{100}$
2.  $\frac{70}{100}$
3.  $\frac{50}{100}$
4.  $\frac{10}{100}$
5.  $\frac{90}{100}$
6.  $\frac{40}{100}$
7.  $\frac{60}{100}$
8.  $\frac{80}{100}$
9.  $\frac{20}{100}$
10.  $\frac{100}{100}$
11.  $\frac{34}{100}$
12.  $\frac{27}{100}$

13.  $\frac{51}{100}$
14.  $\frac{63}{100}$
15.  $\frac{19}{100}$
16.  $\frac{65}{100}$
17.  $\frac{82}{100}$
18.  $\frac{85}{100}$
19.  $\frac{56}{100}$
20.  $\frac{98}{100}$
21.  $\frac{90}{100}$  of the poster
22.  $\frac{40}{100}$
23.  $\frac{65}{100}$  of the points
24.  $\frac{85}{100}$  of a kilometer

### Step-by-Step Explanations

1. Multiply the top and bottom by 10:  $\frac{3}{10} = \frac{30}{100}$ .
2. Ten times bigger denominator means ten times bigger numerator:  $\frac{7}{10} = \frac{70}{100}$ .
3. Multiply top and bottom by 10 to get  $\frac{50}{100}$  — still the same amount, just smaller pieces.
4. One tenth is the same as ten hundredths:  $\frac{1}{10} = \frac{10}{100}$ .
5. Multiply the top and bottom by 10:  $\frac{9}{10} = \frac{90}{100}$ .
6. Four tenths becomes forty hundredths when you multiply by  $\frac{10}{10}$ .
7. Multiply top and bottom by 10:  $\frac{6}{10} = \frac{60}{100}$ .
8. Eight tenths is the same as eighty hundredths.
9. Multiply the top and bottom by 10 to get  $\frac{20}{100}$ .
10. Ten tenths make one whole, and so do one hundred hundredths:  $\frac{10}{10} = \frac{100}{100}$ .
11. Change  $\frac{3}{10}$  to  $\frac{30}{100}$ , then add:  $\frac{30}{100} + \frac{4}{100} = \frac{34}{100}$ .
12.  $\frac{2}{10} = \frac{20}{100}$ , so  $\frac{20}{100} + \frac{7}{100} = \frac{27}{100}$ .
13. Rename  $\frac{5}{10}$  as  $\frac{50}{100}$ , then add the one hundredth:  $\frac{51}{100}$ .
14.  $\frac{6}{10} = \frac{60}{100}$ , and  $\frac{3}{100} = \frac{3}{100}$ , so  $\frac{60}{100} + \frac{3}{100} = \frac{63}{100}$ .
15. Make  $\frac{1}{10}$  into  $\frac{10}{100}$ , then  $\frac{10}{100} + \frac{9}{100} = \frac{19}{100}$ .
16.  $\frac{4}{10} = \frac{40}{100}$ , so  $\frac{40}{100} + \frac{25}{100} = \frac{65}{100}$ .
17. Rename  $\frac{7}{10}$  as  $\frac{70}{100}$ :  $\frac{70}{100} + \frac{12}{100} = \frac{82}{100}$ .
18.  $\frac{8}{10} = \frac{80}{100}$ , and  $\frac{5}{100} = \frac{5}{100}$ , so  $\frac{80}{100} + \frac{5}{100} = \frac{85}{100}$ .
19. Change  $\frac{2}{10}$  to  $\frac{20}{100}$ , then  $\frac{20}{100} + \frac{36}{100} = \frac{56}{100}$ .
20.  $\frac{9}{10} = \frac{90}{100}$ , so  $\frac{90}{100} + \frac{8}{100} = \frac{98}{100}$ .
21. Change  $\frac{9}{10}$  to  $\frac{90}{100}$ , so both fractions count hundredths. Then  $\frac{90}{100} + \frac{30}{100} = \frac{120}{100}$  of the poster.
22. Multiply the top and bottom of  $\frac{4}{10}$  by 10. That gives  $\frac{40}{100}$  — the same amount of water, just measured in hundredths.
23. Rename  $\frac{2}{10}$  as  $\frac{20}{100}$ , so the denominators match. Then  $\frac{20}{100} + \frac{45}{100} = \frac{65}{100}$ .
24. Change  $\frac{7}{10}$  into  $\frac{70}{100}$ , then add:  $\frac{70}{100} + \frac{15}{100} = \frac{85}{100}$  of a kilometer.



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