

# Fractions with Denominators 10 and 100

Name: \_\_\_\_\_

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## 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.  $\frac{3}{10} = \frac{\square}{100}$  \_\_\_\_\_

2.  $\frac{7}{10} = \frac{\square}{100}$  \_\_\_\_\_

3.  $\frac{5}{10} = \frac{\square}{100}$  \_\_\_\_\_

4.  $\frac{1}{10} = \frac{\square}{100}$  \_\_\_\_\_

5.  $\frac{9}{10} = \frac{\square}{100}$  \_\_\_\_\_

6.  $\frac{4}{10} = \frac{\square}{100}$  \_\_\_\_\_

7.  $\frac{6}{10} = \frac{\square}{100}$  \_\_\_\_\_

8.  $\frac{8}{10} = \frac{\square}{100}$  \_\_\_\_\_

9.  $\frac{2}{10} = \frac{\square}{100}$  \_\_\_\_\_

10.  $\frac{10}{10} = \frac{\square}{100}$  \_\_\_\_\_

11.  $\frac{3}{10} + \frac{4}{100}$  \_\_\_\_\_

12.  $\frac{2}{10} + \frac{7}{100}$  \_\_\_\_\_

13.  $\frac{5}{10} + \frac{1}{100}$  \_\_\_\_\_

14.  $\frac{6}{10} + \frac{3}{100}$  \_\_\_\_\_

15.  $\frac{1}{10} + \frac{9}{100}$  \_\_\_\_\_

16.  $\frac{4}{10} + \frac{25}{100}$  \_\_\_\_\_

17.  $\frac{7}{10} + \frac{12}{100}$  \_\_\_\_\_

18.  $\frac{8}{10} + \frac{5}{100}$  \_\_\_\_\_

19.  $\frac{2}{10} + \frac{36}{100}$  \_\_\_\_\_

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  $\frac{6}{10}$  to  $\frac{60}{100}$ , so both fractions count hundredths. Then  $\frac{60}{100} + \frac{30}{100} = \frac{90}{100}$  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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