Fractions with Denominators 10 and 100

Name: _____ Date: _____ Score: _____ / 24

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. _____

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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 $\frac{60}{100} + \frac{3}{100} = \frac{63}{100}$.
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 $\frac{80}{100} + \frac{5}{100} = \frac{85}{100}$.
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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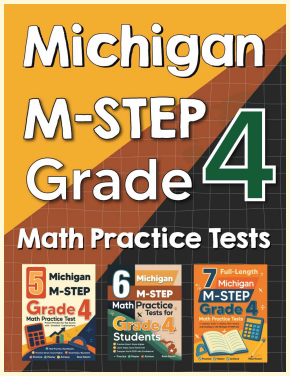

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