

Fractions in Simplest Form

There are two different ways to write a fraction in simplest form.

Write $\frac{20}{24}$ in simplest form.

Divide by Common Factors

- Divide by common factors until the only common factor is 1.
- You can start by dividing by 2, since both numbers are even.

$$\frac{20 \div 2}{24 \div 2} = \frac{10}{12}$$

But both 10 and 12 are also even, so they can be divided by 2.

$$\frac{10 \div 2}{12 \div 2} = \frac{5}{6}$$

- Since 5 and 6 do not have any common factors, $\frac{5}{6}$ is the simplest form.

Divide by the GCF

- First find the GCF of 20 and 24.

$$20: \textcircled{1} \textcircled{2} \textcircled{4} 5, 10, 20$$

$$24: \textcircled{1} \textcircled{2} 3, \textcircled{4} 6, 8, 12, 24$$

- The common factors of 20 and 24 are 1, 2, and 4. The GCF of 20 and 24 is 4.
- Divide both the numerator and the denominator by 4.

$$\frac{20 \div 4}{24 \div 4} = \frac{5}{6}$$

$\frac{20}{24}$ written in simplest form is $\frac{5}{6}$.

Write each fraction in simplest form.

- | | | | | | |
|--------------------------|---------------|--------------------------|---------------|---------------------------|-----------------|
| 1. $\frac{16}{20}$ _____ | $\frac{4}{5}$ | 2. $\frac{8}{16}$ _____ | $\frac{1}{2}$ | 3. $\frac{5}{10}$ _____ | $\frac{1}{2}$ |
| 4. $\frac{8}{32}$ _____ | $\frac{1}{4}$ | 5. $\frac{18}{42}$ _____ | $\frac{3}{7}$ | 6. $\frac{15}{100}$ _____ | $\frac{3}{20}$ |
| 7. $\frac{18}{21}$ _____ | $\frac{6}{7}$ | 8. $\frac{24}{40}$ _____ | $\frac{3}{5}$ | 9. $\frac{55}{70}$ _____ | $\frac{11}{14}$ |

10. **Number Sense** Explain how you can tell that $\frac{31}{33}$ is in simplest form.

Sample answer: 31 is a prime number; 31 and 33 do not have any common factors except 1, so $\frac{31}{33}$ is in simplest form.

Fractions in Simplest Form

Write each fraction in simplest form.

1. $\frac{5}{10}$ — $\frac{1}{2}$

2. $\frac{6}{24}$ — $\frac{1}{4}$

3. $\frac{9}{27}$ — $\frac{1}{3}$

4. $\frac{3}{15}$ — $\frac{1}{5}$

5. $\frac{10}{12}$ — $\frac{5}{6}$

6. $\frac{9}{15}$ — $\frac{3}{5}$

7. $\frac{2}{18}$ — $\frac{1}{9}$

8. $\frac{25}{60}$ — $\frac{5}{12}$

9. $\frac{12}{72}$ — $\frac{1}{6}$

10. **Number Sense** Explain how you can tell $\frac{4}{5}$ is in simplest form.

Sample answer: The numerator and the denominator have no common factors other than 1.

Write in simplest form.

11. What fraction of the problems on the math test will be word problems?

$$\frac{1}{7}$$

12. What fraction of the problems on the math test will be multiple-choice problems?

$$\frac{4}{7}$$

13. Which is the simplest form of $\frac{10}{82}$?

A $\frac{1}{8}$

B $\frac{1}{22}$

C $\frac{10}{82}$

D $\frac{5}{41}$

14. **Explain It** Explain how you can find the simplest form of $\frac{100}{1,000}$.

Sample answer: The GCF of 100 and 1,000 is 100. The simplest form is $\frac{100 \div 100}{1,000 \div 100} = \frac{1}{10}$.

Math Test

- ➔ 20 Multiple-choice problems
- ➔ 10 Fill in the blanks
- ➔ 5 Word problems

Name _____

Enrichment

9-7

How Simple Can It Be?

In each row, cross out the fractions that are in simplest form.

Number Sense

- | | | | | | |
|-----|---------------------------------------|---------------------------------------|--------------------------------------|--------------------------------------|-------------------------------------|
| 1. | $\frac{3}{13}$ | $\frac{2}{5}$ | $\frac{7}{21}$ | $\frac{2}{3}$ | $\frac{4}{52}$ |
| 2. | $\frac{5}{9}$ | $\frac{8}{10}$ | $\frac{3}{6}$ | $\frac{1}{2}$ | $\frac{2}{30}$ |
| 3. | $\frac{10}{12}$ | $\frac{3}{51}$ | $\frac{1}{4}$ | $\frac{40}{45}$ | $\frac{60}{70}$ |
| 4. | $\frac{5}{9}$ | $\frac{2}{3}$ | $\frac{6}{21}$ | $\frac{10}{42}$ | $\frac{25}{50}$ |
| 5. | $\frac{10}{15}$ | $\frac{72}{81}$ | $\frac{50}{52}$ | $\frac{2}{3}$ | $\frac{1}{8}$ |
| 6. | $\frac{50}{75}$ | $\frac{2}{3}$ | $\frac{60}{62}$ | $\frac{40}{100}$ | $\frac{17}{68}$ |
| 7. | $\frac{2}{3}$ | $\frac{8}{10}$ | $\frac{15}{18}$ | $\frac{2}{22}$ | $\frac{9}{117}$ |
| 8. | $\frac{6}{9}$ | $\frac{2}{3}$ | $\frac{45}{48}$ | $\frac{16}{18}$ | $\frac{1}{4}$ |
| 9. | $\frac{2}{3}$ | $\frac{2}{3}$ | $\frac{50}{90}$ | $\frac{2}{3}$ | $\frac{2}{3}$ |
| 10. | $\frac{3}{6}$ | $\frac{2}{22}$ | $\frac{14}{21}$ | $\frac{30}{80}$ | $\frac{56}{58}$ |
| 11. | $\frac{3}{12}$ | $\frac{6}{8}$ | $\frac{8}{10}$ | $\frac{7}{10}$ | $\frac{4}{8}$ |
| 12. | $\frac{5}{10}$ | $\frac{10}{10}$ | $\frac{42}{44}$ | $\frac{76}{80}$ | $\frac{15}{45}$ |

13. Write the total number of fractions not crossed out from the rows above as a fraction. Then write in simplest form.

$$\frac{24}{60} = \frac{2}{5}$$

Enrichment 9-7