

Identifying Equivalent Fractions

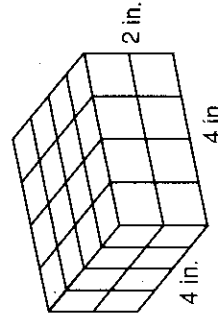
Facts Practice: Simplify 60 Improper Fractions (Test H in Test Masters)

Mental Math: How many ounces is a pound? How many pounds is a ton? How many pounds is 2 tons? 3 tons? 4 tons?

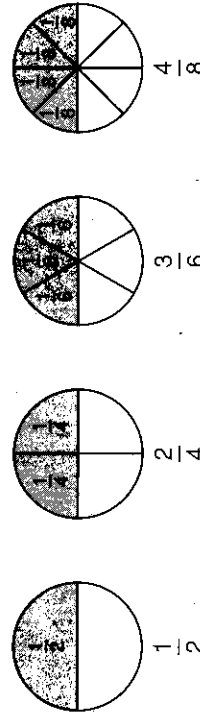
a. CCCXXXIII b. CCCLXXXVIII

c. What number is 50% of 5? d. $\sqrt{16} \times 2 + 2 \div 10 - 1 \times 5$

Problem Solving: Some 1-inch cubes were stacked together to build this rectangular prism. How many 1-inch cubes were used?

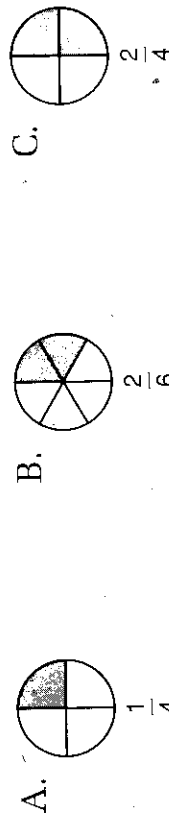


The same amount of each circle below is shaded. We can use different fractions to name the shaded part of each circle.



We can use $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, and $\frac{4}{8}$. These fractions all name the same amount. Different fractions which name the same amount are called **equivalent fractions**. The word *equivalent* means "equal in value." The fractions $\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, and $\frac{4}{8}$ are all equivalent fractions because they all name the same amount.

Example 1 Which of these is equivalent to $\frac{1}{3}$?



Solution Equivalent fractions name the same amount. By looking at the circles we see that the circle with the same amount shaded as the circle in the question is circle **B**. So $\frac{2}{6}$ is equivalent to $\frac{1}{3}$.

Example 2 Compare: $\frac{1}{2}$ ○ $\frac{2}{4}$

Solution We cannot compare these fractions by looking at the numerators because the denominators are different. Looking at the circles at the beginning of the lesson, we see that $\frac{1}{2}$ and $\frac{2}{4}$ are two ways to name the same number. The fractions are equivalent. We show that quantities are equal or equivalent by using an equal sign.

$$\frac{1}{2} = \frac{2}{4}$$

Practice a. What do we call different fractions which name the same amount?

b. Which two fractions are equivalent? $\frac{2}{4}$, $\frac{3}{6}$, $\frac{1}{3}$

c. $\frac{1}{3} = \frac{2}{6}$ (true or false?)

have long hair. What fraction of the students are girls with long hair? What percent of the students are girls with long hair?

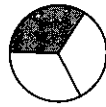
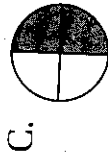
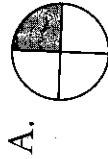
2. Friendly Fred bought a car for \$860 and sold it for \$1300. How much profit did he make?

3. Heather read a 316-page book in 4 days. She averaged reading how many pages per day?

4. The pickup truck could carry $\frac{1}{2}$ ton. How many pounds is $\frac{1}{2}$ ton?

5. The baby kitten weighed one half of a pound. How many ounces did it weigh?

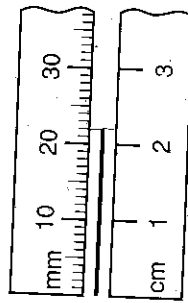
6. Which shaded circle below is equivalent to this shaded circle?



7. Which of these fractions is not equivalent to one half?

- A. $\frac{50}{100}$ B. $\frac{1000}{2000}$ C. $\frac{16}{30}$ D. $\frac{6}{12}$

8. Name the length of this segment twice: first as a number of millimeters and second as a number of centimeters.



9. List the numbers that are factors of both 6 and 8.

10. LN is 64 millimeters. LM is 39 millimeters. Find MN .



11. $\frac{2}{3} + \frac{2}{3} + \frac{2}{3}$

12. $\frac{3}{3} - \frac{2}{2}$

13. $9\frac{4}{10} + 4\frac{9}{10}$

14. $\begin{array}{r} 43.625 \\ - 5.78 \\ + 16.942 \\ \hline \end{array}$

15. $\begin{array}{r} \$40.00 \\ - 13.48 \\ \hline \end{array}$

16. $\begin{array}{r} \$20.50 \\ \times 8 \\ \hline \end{array}$

17. $9 \overline{) \$56.70}$

18. $\begin{array}{r} 375 \\ \times 842 \\ \hline \end{array}$

19. $80 \overline{) 4650}$

20. Divide and write the quotient as a mixed number: $\frac{98}{5}$

21. $\frac{3}{4}$ of $\frac{1}{2}$

22. $\frac{3}{2} \times \frac{3}{4}$

23. $\frac{1}{3} \times \frac{2}{2}$

- Read this information. Then answer questions 24 and 25.

It is 1.5 miles from Sandra's house to school. It takes Sandra 30 minutes to walk to school and 12 minutes if she rides her bike.

24. How far does Sandra travel going to school and back in 1 day?

25. If Sandra leaves her house at 7:55 a.m. and rides her bike, at what time will she get to school?