Exercises 2-1

Working with Fractions

A. Write as an improper fraction.

1. $2\frac{1}{3}$ 2. $7\frac{1}{2}$ 3. $8\frac{3}{8}$ 4. $1\frac{1}{16}$ 5. $2\frac{7}{8}$

6. 2 7. $2\frac{2}{3}$ 8. $4\frac{3}{64}$ 9. $4\frac{5}{6}$ 10. $1\frac{13}{16}$

B. Write as a mixed number.

1. $\frac{17}{2}$ 2. $\frac{8}{5}$ 3. $\frac{11}{8}$ 4. $\frac{40}{16}$ 5. $\frac{3}{2}$

6. $\frac{11}{3}$ 7. $\frac{100}{6}$ 8. $\frac{4}{3}$ 9. $\frac{80}{32}$ 10. $\frac{5}{2}$

C. Write in lowest terms.

1. $\frac{12}{16}$ 2. $\frac{4}{6}$ 3. $\frac{6}{16}$ 4. $\frac{18}{4}$ 5. $\frac{4}{10}$

6. $\frac{35}{30}$ 7. $\frac{24}{30}$ 8. $\frac{10}{4}$ 9. $4\frac{3}{12}$ 10. $\frac{34}{32}$

11. $\frac{42}{64}$ 12. $\frac{10}{35}$ 13. $\frac{15}{36}$ 14. $\frac{45}{18}$ 15. $\frac{38}{24}$

D. Complete.

1. $\frac{7}{8} = \frac{?}{16}$ 2. $\frac{3}{4} = \frac{?}{16}$ 3. $\frac{1}{8} = \frac{?}{64}$

4. $\frac{3}{8} = \frac{?}{64}$ 5. $1\frac{1}{4} = \frac{?}{16}$ 6. $2\frac{7}{8} = \frac{?}{32}$

7. $3\frac{3}{5} = \frac{?}{10}$ 8. $1\frac{1}{16} = \frac{?}{32}$ 9. $1\frac{40}{60} = \frac{?}{3}$

10. $4 = \frac{?}{6}$ 11. $2\frac{5}{8} = \frac{?}{16}$ 12. $2\frac{5}{6} = \frac{?}{12}$

E. Which is larger?

1. $\frac{3}{5}$ or $\frac{4}{7}$ 2. $\frac{3}{2}$ or $\frac{13}{8}$ 3. $1\frac{1}{2}$ or $1\frac{3}{7}$

4. $\frac{3}{4}$ or $\frac{13}{16}$ 5. $\frac{7}{8}$ or $\frac{5}{6}$ 6. $2\frac{1}{2}$ or $1\frac{11}{8}$

7. $1\frac{2}{5}$ or $\frac{6}{4}$ 8. $\frac{3}{16}$ or $\frac{25}{60}$ 9. $\frac{13}{5}$ or $\frac{5}{2}$

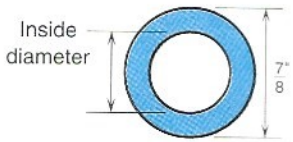
10. $3\frac{1}{2}$ or $2\frac{7}{4}$ 11. $\frac{3}{8}$ or $\frac{5}{12}$ 12. $1\frac{1}{5}$ or $\frac{8}{7}$

F. Practical Problems

1. **Carpentry** Maria, an apprentice carpenter, measured the length of a 2 by 4 as $15\frac{6}{8}$ in. Express this measurement in lowest terms.

2. **Electrical Technology** An electrical light circuit in John's welding shop had a load of 2800 watts. He changed the circuit to ten 150-watt bulbs and six 100-watt bulbs. What fraction represents a comparison of the new load with the old load?

3. The numbers $\frac{22}{7}$, $\frac{19}{6}$, $\frac{47}{15}$, $\frac{25}{8}$, and $\frac{41}{13}$ are all reasonable approximations to the number π. Which is the largest approximation? Which is the smallest approximation?



Problem 5

4. **Sheet-Metal Technology** Which is thicker, a $\frac{3}{16}$-in. sheet of metal or a $\frac{13}{64}$-in. fastener?

5. **Plumbing** Is it possible to have a $\frac{7}{8}$-in pipe with an inside diameter of $\frac{29}{32}$-in.?

6. **Sheet-Metal Technology** Fasteners are equally spaced on a metal vent cover, with 9 spaces between fasteners covering 24 in. Write the distance between spaces as a mixed number.

$$\frac{24}{9} = ?$$

7. **Printing** A printer has 15 rolls of newsprint in the warehouse. What fraction of this total will remain if six rolls are used?

8. **Machine Technology** A machinist who had been producing 40 parts per day increased the output to 60 parts per day by going to a faster machine. How much faster is the new machine? Express your answer as a mixed number.

9. **Landscaping** Before it can be used, a 12-litre container of liquid fertilizer must be mixed with 48 litres of water. What fraction of the final mixture is fertilizer?

10. **Roofing** A ridge beam rises 18 inches over a horizontal run of 72 inches. Calculate the slope of the roof and express it as a fraction with a denominator of 12.

When you have had the practice you need, check your answers in the back of the book.