

**Lesson 1.2 Notes (Complex Fractions and Unit Rates)****Key Terms:**

- **Complex Fractions** – fractions with a numerator, denominator, or both that are also fractions
  - **Example:**  $\frac{20}{\frac{1}{2}}$  (notice the fraction within a fraction)
  - **To Simplify:** ensure the numerator and denominator are both integers
    - Change the complex fraction into a **division problem**.
    - Then, multiply by the reciprocal. (**KEEP – CHANGE – FLIP**)

**Practice:**

$$1. \frac{18}{\frac{3}{4}} = \frac{18}{1} \div \frac{3}{4} = \frac{18}{1} \cdot \frac{4}{3} = \frac{24}{1} = \boxed{24}$$

$$2. \frac{\frac{3}{6}}{\frac{4}{1}} = \frac{3}{6} \div \frac{4}{1} = \frac{3}{6} \cdot \frac{1}{4} = \frac{3}{24} = \boxed{\frac{1}{8}}$$

$$3. \frac{\frac{1}{3}}{\frac{1}{4}} = \frac{1}{3} \div \frac{1}{4} = \frac{1}{3} \cdot \frac{4}{1} = \frac{4}{3} = \boxed{1\frac{1}{3}}$$

4. Tia is painting her house. She paints  $34\frac{1}{2}$  square feet in  $\frac{3}{4}$  hour. At this rate, how many square feet can she paint each hour?

$$\frac{34\frac{1}{2} \text{ ft}^2}{\frac{3}{4} \text{ hr}} = \frac{69}{2} \div \frac{3}{4} = \frac{69}{2} \cdot \frac{4}{3} = \frac{46}{1} = \boxed{46 \text{ ft}^2/\text{h}}$$

5. Mr. Ito is spreading mulch in his yard. He spreads  $4\frac{2}{3}$  square yards in 2 hours. How many square yards can he mulch per hour?

$$\frac{4\frac{2}{3} \text{ yds}^2}{2 \text{ hr}} = \frac{14}{3} \div 2 = \frac{14}{3} \cdot \frac{1}{2} = \frac{7}{3} = \boxed{2\frac{1}{3} \text{ yd}^2/\text{h}}$$

6. Aubrey can walk  $4\frac{1}{2}$  miles in  $1\frac{1}{2}$  hours. Find her average speed in miles per hour.

$$\frac{4\frac{1}{2} \text{ mi}}{1\frac{1}{2} \text{ hr}} = \frac{9}{2} \div \frac{3}{2} = \frac{9}{2} \cdot \frac{2}{3} = \frac{3}{1} = \boxed{3 \text{ mph}}$$