Placement Test for Principles of Mathematics Book 1

■ Do not use a calculator.

■ Unless instructed otherwise, give all fractional answers in simplest terms. This includes converting improper fractions to mixed numbers.

1. **Basic Operations**

   a. 205 + 876

   b. 25 – 19

   c. 23 x 68

   d. 870 ÷ 5

2. **Fractions**

   a. $\dfrac{1}{2} + \dfrac{7}{8}$

   b. $3 \times \dfrac{5}{6}$

   c. $\dfrac{2}{3} - \dfrac{1}{4}$

   d. $\dfrac{4}{7} \div \dfrac{5}{6}$

3. **Decimals**

   a. 1.56 + 8.6

   b. 23.5 – 0.6

   c. 22.5 x 6

   d. 45.6 ÷ 3

4. **Miscellaneous** — Does the 3 in 4,350 represent 300, 30, or 3?

Grading

This test is designed to help determine if a student is ready to begin Book 1 of *Principles of Mathematics*.

If students get problems wrong on the placement test, check to see if they made a careless error or if they truly didn't understand a concept. It's okay if students make a few errors, but it's important that students are familiar with these concepts before beginning Book 1:

- addition

- subtraction

- multiplication

- division

- decimals (including adding, subtracting, multiplying, and dividing them)

- fractions (including adding, subtracting, multiplying, and dividing them)

Students also need to have the mental development to explore problem solving, which will be emphasized in Book 1.

Note: Book 1 will review addition, subtraction, multiplication, division, decimals, and fractions, so if students struggle with any of those concepts they will get practice and reinforcement; however, it should not be the first time they're encountering them.

Answers

1. a. 1,081

    b. 6

    c. 1,564

    d. 174

2. a. $\frac{4}{8} + \frac{7}{8} = \frac{11}{8} = 1\frac{3}{8}$

    b. $\frac{15}{6} = 2\frac{3}{6} = 2\frac{1}{2}$

    c. $\frac{8}{12} - \frac{3}{12} = \frac{5}{12}$

    d. $\frac{4}{7} \cdot \frac{6}{5} = \frac{24}{35}$

3. a. 10.16

    b. 22.9

    c. 135

    d. 15.2

4. 300