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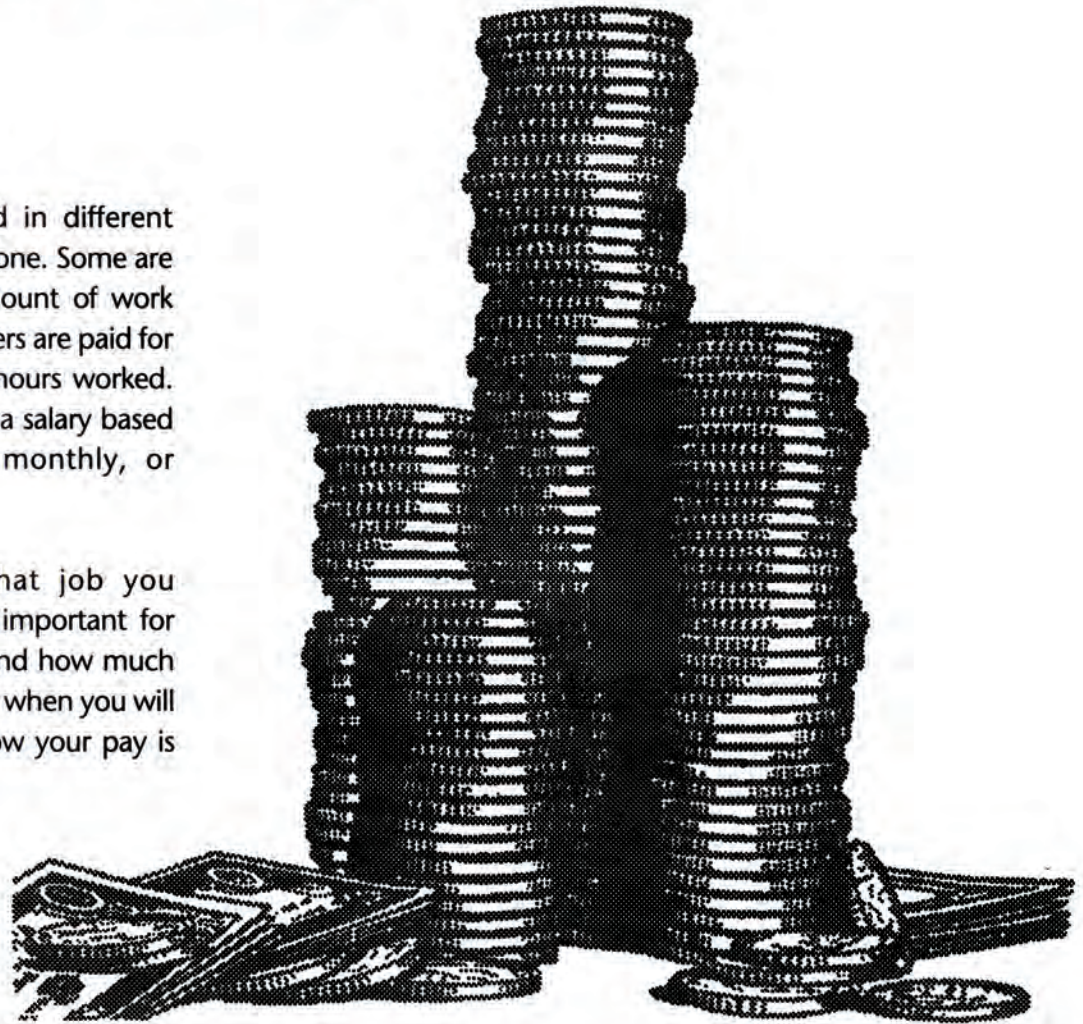
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CHAPTER ONE

EARNINGS

People are paid in different ways for work done. Some are paid by the amount of work completed. Others are paid for the number of hours worked. Still others have a salary based on a weekly, monthly, or annual rate.

No matter what job you undertake, it is important for you to understand how much you will be paid, when you will be paid, and how your pay is computed.



Chapter Objectives



After completing this chapter, you will be able to:

- Round a number to a given place
- Multiply fractions and mixed numbers
- Calculate wages based on hourly work and overtime
- Calculate wages based on piecework
- Solve problems for given salary information

PRETEST

Write the place value of the 3 in each number.

1. 5,093

2. 3,098

3. 2,949.3

4. 309.78

Insert < or > to form a correct statement.

5. 456 ___ 465

6. 6.01 ___ 36.11

7. 1,990.9 ___ 1,991.2

Round to the nearest dollar.

8. \$42.40

9. \$101.75

10. \$0.99

11. \$4,082.49

Multiply. Round each answer to the nearest tenth.

$$\begin{array}{r} 12. \quad 15.54 \\ \times \quad 6 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 27.58 \\ \times \quad 7 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 93.56 \\ \times \quad 8 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 60.07 \\ \times \quad 9 \\ \hline \end{array}$$

Divide and round your answer to the nearest tenth. Write only your answer.

16. 483.3 divided by 5

17. 301.8 divided by 9

Multiply and reduce answers to lowest terms

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

19. $\frac{3}{5} \times \frac{1}{2}$

20. $\frac{1}{2} \times \frac{3}{10}$

21. $\frac{1}{3} \times \frac{1}{4}$

Find the total amount earned for each.

22. 37 hr at \$6.00

23. 39 hr at \$6.50

24. A tester is paid \$1.25 each for the first 100 calculators tested and \$1.75 each after that. How much is she paid if she tests 136 calculators?

25. A worker is paid \$2300 per month. If his annual salary at this rate is then paid on a weekly basis, what is his weekly pay?

PLACE VALUE AND ORDER

The digits 1 to 9 have different values depending on where they appear in a number.

ten thousands	thousands	hundreds	tens	units	tenths	hundredths	thousandths	
4	8	7	2	9	.	3	1	6

EXAMPLE

Find the place value of the 8 in the place value chart? thousands

- Find the place value of the 3.

- Find the place value of the 4.

- Find the place value of the 9.

- Find the place value of the 1.

Find the place value of the 5 in each number.

- 4581

- 78.57

- 25,094.3

- 349.057

To compare two decimal numbers, read from the decimal point to the right until you come to the first place where one has a larger digit. That is the larger number.

EXAMPLE

Remember $<$ opens up to the larger number:

$$3 < 7 \quad 6.5 > 6.4 \quad 3.56 < 3.57$$

Insert $<$ or $>$ for each . The first two answers are given.

- $2.34 < 2.35$
- $71.2 > 7.12$
- $0.23 \underline{\quad} 0.25$
- $927 \underline{\quad} 927.1$
- $39.34 \underline{\quad} 39.4$
- $2543 \underline{\quad} 254.39$
- $38.34 \underline{\quad} 38.345$
- $200.89 \underline{\quad} 201$
- $0.123 \underline{\quad} 0.122$
- $32,445 \underline{\quad} 32,444.9$
- $7 \underline{\quad} 6.79$
- $91.67 \underline{\quad} 916$
- $0.29 \underline{\quad} 0.289$
- $51.55 \underline{\quad} 51.5$
- $4701.6 \underline{\quad} 4701.4$

ROUNDING, MULTIPLICATION, AND DIVISION

To round a number:

- (1) Underline the number in the rounding place;
- (2) Consider the number to the right of the rounding place;
- (3) If the number to the right of the rounding place is 5 or greater, increase the number in the rounding place by 1;
- (4) If the number to the right of the rounding place is less than 5, leave the number in the rounding place unchanged and add zeroes as needed.

EXAMPLES

A. Round to the nearest hundred.

6789

6789 8 is greater than 5

6800 rounded

B. Round to the nearest hundredth.

3.574

3.574 4 is less than 5

3.570 rounded

Round to the nearest tenth.

1. 3.56

2. 14.71

3. 65.55

4. 1.05

5. 1.04

Round to the nearest whole number (unit).

6. 17.5

7. 23.99

8. 1.81

9. 138.2

10. 500.9

Round to the nearest hundred.

11. 36,780

12. 492

13. 3956

14. 585.4

15. 755

Divide. Round the answer to the nearest whole number. Write only the answer.

16. 3145 divided by 6

17. 4379 divided by 7

18. $805 \div 5$

19. $1271 \div 3$

ROUNDING, MULTIPLICATION, AND DIVISION

When multiplying decimals, count off as many places in the answer as the total number of places in both factors.

Multiply. Round each answer to the nearest tenth.

1.
$$\begin{array}{r} 43.25 \\ \times 6 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 16.79 \\ \times 7 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 28.36 \\ \times 8 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 90.15 \\ \times 9 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 4.6 \\ \times 3.5 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 7.8 \\ \times 2.9 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 9.2 \\ \times 7 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 10.5 \\ \times 3.8 \\ \hline \end{array}$$

When dividing a decimal by a whole number, place a decimal point in the quotient, over the decimal point in the dividend.

EXAMPLE

Divide 392.6 by 12. Round your answer to the nearest tenth.

$$\begin{array}{r} 32.71 \\ 12 \overline{)392.6} \end{array}$$

Diagram labels: Divisor (12), Dividend (392.6), Quotient (32.71)

Rounding to the nearest tenth, the quotient is 32.71

Divide and round your answer to the nearest tenth. Write only your answer.

9. 647.5 divided by 5

10. 257.6 divided by 7

11. 875.6 divided by 16

12. 751.6 divided by 21

13. 384.7 divided by 17

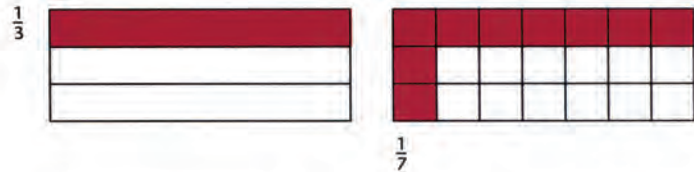
14. 657.5 divided by 25

15. 340.9 divided by 9

16. 1100.7 divided by 8

MULTIPLYING FRACTIONS

A fraction is a part. Multiplying fractions means taking part of a part. The shaded portions represent parts: one-third and one-seventh.



You can reduce a fraction by dividing numerator and denominator by the same number.

$$\frac{1}{3} \times \frac{1}{7} = \frac{1}{21}$$

$$\frac{4}{8} = \frac{1}{2} \quad \frac{9}{12} = \frac{3}{4} \quad \leftarrow \text{numerator}$$

$$\hspace{10em} \leftarrow \text{denominator}$$

EXAMPLES

Multiply and reduce to lowest terms.

$$\frac{2}{5} \times \frac{7}{8} = \frac{14}{40} = \frac{7}{20}$$

Multiply numerator by numerator and denominator by denominator. Then reduce to lowest terms.

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

2. $\frac{3}{8} \times \frac{1}{2}$

3. $\frac{3}{4} \times \frac{3}{10}$

4. $\frac{1}{3} \times \frac{1}{4}$

5. $\frac{2}{5} \times \frac{3}{8}$

6. $\frac{7}{10} \times \frac{4}{5}$

7. $\frac{5}{8} \times \frac{2}{3}$

8. $\frac{3}{10} \times \frac{1}{2}$

To multiply a whole number by a fraction, multiply the numerator by the whole number and divide the product by the denominator.

$$\frac{2}{3} \times 10 = \frac{20}{3} = 6\frac{2}{3}$$

Multiply and simplify.

9. $\frac{1}{2} \times 12$

10. $\frac{2}{5} \times 10$

11. $\frac{4}{5} \times 8$

12. $\frac{3}{10} \times 7$

13. $\frac{1}{3} \times 4$

14. $\frac{3}{8} \times 100$

15. $\frac{7}{10} \times 6$

16. $\frac{1}{4} \times 50$

MULTIPLYING FRACTIONS AND MIXED NUMBERS

To multiply mixed numbers:

(1) Change each to an improper fraction: $2\frac{1}{3} = \frac{6+1}{3} = \frac{7}{3}$

(2) Multiply as fractions;

(3) Simplify the answer.

EXAMPLE

Multiply $2\frac{1}{2} \times 3\frac{2}{3} \rightarrow \frac{5}{2} \times \frac{11}{3} = \frac{55}{6} = 9\frac{1}{6}$

Multiply. Simplify answers and reduce to lowest terms.

1. $2\frac{1}{4} \times 3\frac{1}{2}$

2. $\frac{1}{4} \times 25$

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

4. $\frac{13}{10} \times 100$

5. $1\frac{3}{8} \times 2\frac{1}{2}$

6. $2\frac{3}{4} \times 12$

7. $3\frac{1}{4} \times \frac{1}{2}$

8. $1\frac{1}{2} \times 1\frac{1}{2}$

9. $1\frac{3}{4} \times 14$

10. $1\frac{5}{8} \times \frac{1}{2}$

11. $2\frac{1}{4} \times 2\frac{1}{4}$

12. $24 \times 3\frac{1}{2}$

13. $\frac{1}{4} \times \frac{2}{3}$

14. $2\frac{1}{10} \times 50$

15. $\frac{3}{8} \times \frac{2}{3}$

16. $1\frac{2}{3} \times 36$

Round each number to the nearest dollar.

17. \$4.98

18. \$99.49

19. \$21.09

20. \$0.50

State the place value of the 9 in each number.

21. 89,216

22. 78.95

23. 709.7

24. 501.09
