CLERICAL
STUDY GUIDE
& SAMPLE TEST QUESTIONS
VERSION 2

COUNTY OF
LOS ANGELES

Los Angeles
County
Human Resources
YOUR CAREER STARTS HERE.

WELCOME

Thank you for your interest in employment with the County of Los Angeles. This booklet is designed to familiarize and assist you with preparing for tests containing multiple-choice entry-level clerical items. The sample questions provided in this study guide are intended to give you an idea of the kinds of clerical items you may encounter in County tests. However, it is important to note that actual test questions will vary in format, content, and level of difficulty, depending on the job class being tested.

ABOUT THE COUNTY'S EXAMINATIONS

As an Equal Opportunity Employer, the County of Los Angeles takes steps to ensure that our exam content is job-related. We conduct studies to determine the knowledge, skills, abilities, and personal characteristics that are essential to satisfactorily perform the duties of the job. These studies assist us in developing the content of our examinations. Pre-employment testing provides us with an objective and cost-effective means to assess the qualifications of our applicants.

NOTE: Applicants who require special testing arrangements such as readers or interpreters must provide seven (7) days advance notice of their disability and requested accommodation. Check the front side of the job bulletin for telephone numbers to call to make disability accommodation requests. The County will attempt to meet reasonable accommodation requests whenever possible.

TEST-TAKING TIPS

Most County tests have a set time limit, so it is important that you work quickly, but not so fast as to become careless. Always read all the possible choices before marking your answer. If you do not know the answer to a problem, it is usually best to skip it and move on to the others. Note that on most County tests, your score is based on the number of correct responses. If you are not sure of the answer to a problem, eliminate the answers you believe are wrong, and mark the choice that is your best response. Above all, budget your time, pace yourself, and avoid getting bogged down on any single question.

On test day, it is recommended that you arrive 15 minutes prior to the test's starting time, wear comfortable clothes, bring an accurate watch, and make sure you are well-rested. Also, remember to bring your test notice and a picture I.D. such as a driver license, or you may not be admitted into the test!

Ability to File

INSTRUCTIONS: For questions 1-15, find the answers to the alphabetical and numerical examples shown. Items are arranged for alphabetical filing by *last name*, then by *first name*, from A to Z. Items are arranged for numerical filing from *lowest* to *highest* value.

1. If the names Brian Josten, <u>Francine Johnson</u>, Frank Jones, and Mary Johnston were arranged for alphabetical filing, the position of the <u>underlined</u> name would be

   A. first.
   B. second.
   C. third.
   D. fourth.

   ANSWER: The order would be <u>Francine Johnson</u>, Mary Johnston, Frank Jones, and Brian Josten. The <u>underlined</u> name is <u>first</u>; therefore, choice **A** is the correct answer.

2. If the names <u>John Marks</u>, Janice Mark, Angela McCauley, and Jocelyn Miners were arranged for alphabetical filing, the position of the <u>underlined</u> name would be

   A. first.
   B. second.
   C. third.
   D. fourth.

   ANSWER: The order would be Janice Mark, <u>John Marks</u>, Angela McCauley, and Jocelyn Miners. The <u>underlined</u> name is <u>second</u>; therefore, choice **B** is the correct answer.

3.   If the names Joan Park, Jake Pikes, Jackie Palms, and <u>Jason Pice</u> were arranged for alphabetical filing, the position of the <u>underlined</u> name would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be Jackie Palms, Joan Park, <u>Jason Pice</u>, and Jake Pikes. The <u>underlined</u> name is <u>third</u>; therefore, choice **C** is the correct answer.

4.   If the names Abigail Romero, Jonathan Ruben, <u>Erica Ross</u>, and George Rolen were arranged for alphabetical filing, the position of the <u>underlined</u> name would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be George Rolen, Abigail Romero, <u>Erica Ross</u>, and Jonathan Ruben. The <u>underlined</u> name is <u>third</u>; therefore, choice **C** is the correct answer.

5.   If the names Barbara Baker, <u>Bruce Biggins</u>, Bobby Boden, and Brian Bronsen were arranged for alphabetical filing, the position of the <u>underlined</u> name would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be Barbara Baker, <u>Bruce Biggins</u>, Bobby Boden, and Brian Bronsen. The <u>underlined</u> name is <u>second</u>; therefore, choice **B** is the correct answer.

6.   If the names Jeremy Gulden, Jason Gross, Jaime Gains, and James Gray were arranged for alphabetical filing, the position of the underlined name would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be Jaime Gains, James Gray, Jason Gross, and Jeremy Gulden. The underlined name is first; therefore, choice **A** is the correct answer.

7.   If the names Harold Williams, Haley Washington, Helen Wellington, and Howard Woo were arranged for alphabetical filing, the position of the underlined name would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be Haley Washington, Helen Wellington, Harold Williams, and Howard Woo. The underlined name is third; therefore, choice **C** is the correct answer.

8.   If the numerical sequences 6.259, 0.62958, 62.258, and 6.258963 were arranged for numerical filing, the position of the underlined sequence would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be 0.62958, 6.258963, 6.259, and 62.258. The underlined sequence is fourth; therefore, choice **D** is the correct answer.

9.   If the numerical sequences 7.215, 72.15, 721.5, and <u>7.251</u> were arranged for numerical filing, the position of the <u>underlined</u> sequence would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be 7.215, <u>7.251</u>, 72.15, and 721.5. The <u>underlined</u> sequence is <u>second</u>; therefore, choice **B** is the correct answer.

10.   If the numerical sequences 23.25698, <u>232.2564</u>, 2.32568, and 0.2351 were arranged for numerical filing, the position of the <u>underlined</u> sequence would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be 0.2351, 2.32568, 23.25698, and <u>232.2564</u>. The <u>underlined</u> sequence is <u>fourth</u>; therefore, choice **D** is the correct answer.

11.   If the numerical sequences 859.265, <u>8.59632</u>, 85.2369, and 859652 were arranged for numerical filing, the position of the <u>underlined</u> sequence would be

A.   first.
B.   second.
C.   third.
D.   fourth.

ANSWER: The order would be <u>8.59632</u>, 85.2369, 859.265, and 859652. The <u>underlined</u> sequence is <u>first</u>; therefore, choice **A** is the correct answer.

12. If the numerical sequences 1.9978, 199.789, 19.9789, and <u>1997.89</u> were arranged for numerical filing, the position of the <u>underlined</u> sequence would be

   A. first.
   B. second.
   C. third.
   D. fourth.

   ANSWER: The order would be 1.9978, 19.9789, 199.789, and <u>1997.89</u>. The <u>underlined</u> sequence is <u>fourth</u>; therefore, choice **D** is the correct answer.

13. If the numerical sequences 5.1268, 51.263, <u>551.258</u>, and 55.258 were arranged for numerical filing, the position of the <u>underlined</u> sequence would be

   A. first.
   B. second.
   C. third.
   D. fourth.

   ANSWER: The order would be 5.1268, 51.263, 55.258, and <u>551.258</u>. The <u>underlined</u> sequence is <u>fourth</u>; therefore, choice **D** is the correct answer.

14. If the numerical sequences 658.963, 6.5268, <u>6.5269</u>, and 65.259 were arranged for numerical filing, the position of the <u>underlined</u> sequence would be

   A. first.
   B. second.
   C. third.
   D. fourth.

   ANSWER: The order would be 6.5268, <u>6.5269</u>, 65.259, and 658.963. The <u>underlined</u> sequence is <u>second</u> therefore; choice **B** is the correct answer.

15. If the numerical sequences 78.645, <u>78.653</u>, 79.100, and 7.8645 were arranged for numerical filing, the position of the <u>underlined</u> sequence would be

    A. first.
    B. second.
    C. third.
    D. fourth.

    ANSWER: The order would be 7.8645, 78.645, <u>78.653</u>, and 79.100. The <u>underlined</u> sequence is <u>third</u> therefore; choice **C** is the correct answer.

Checking for Errors

INSTRUCTIONS: For questions <u>16-30</u>, compare the COPY with its ORIGINAL and count the number of errors you find in the COPY. When the order of two numbers or letters is reversed, <u>one</u> error is counted.

16. **<u>ORIGINAL</u>**   **<u>COPY</u>**
    Mr. Erin Williams   Mrs. Erin Williams
    32109 North 23rd Street   32109 North 223rd Street
    Gardena CA 90228   Gardena CA 90248

    The number of errors in the **COPY** when compared to the **ORIGINAL** is

    A. one.
    B. two.
    C. three.
    D. none of these.

    ANSWER: When comparing the COPY to the ORIGINAL, the following three errors can be found:

    - In the COPY, "Mrs." should be "Mr." as shown in the ORIGINAL.
    - In the COPY, "223rd" should be "23rd" as shown in the ORIGINAL.
    - In the COPY, "90248" should be "90228" as shown in the ORIGINAL.

    <u>Three</u> errors can be found; therefore, choice **C** is the correct answer.

17. **ORIGINAL**   **COPY**
    Yearly Staff Totals: Yearly Staf Total:
    1990 123   1990 123
    1991 119   1991 119
    1992 124   1992 124
    1993 120   1993 122
    1994 121   1994 121
    1995 111   1995 111
    1996 126   1996 136

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following four errors can be found:

- In the COPY, "Staf" should be "Staff" as shown in the ORIGINAL.
- In the COPY, "Total" should be "Totals" as shown in the ORIGINAL.
- In the COPY, "122" should be "120" as shown in the ORIGINAL.
- In the COPY, "136" should be "126" as shown in the ORIGINAL.

Four errors can be found; therefore, choice **D** is the correct answer.

18. **ORIGINAL**

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COPY

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The number of errors in the **COPY** when compared to the **ORIGINAL** is

A. one.
B. two.
C. three.
D. none of these.

ANSWER: When comparing the COPY to the ORIGINAL, no errors can be found.

Zero errors can be found; therefore, choice **D** is the correct answer.

19. **ORIGINAL**

Mr. Ronald Richardson
2012 Clay Blvd.
Los Angeles CA 90012

COPY

Mr. Ronold Richardson
2012 Clay Blvd
Los Angeles CA 90002

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A. one.
B. two.
C. three.
D. none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following three errors can be found:

- In the COPY, "Ronold" should be spelled "Ronald" as shown in the ORIGINAL.
- In the COPY, a period should be inserted after "Blvd" as shown in the ORIGINAL.
- In the COPY, "90002" should be "90012" as shown in the ORIGINAL.

Three errors can be found; therefore, choice **C** is the correct answer.

20. **ORIGINAL**   **COPY**
Beverly Johnson   Beverly Johnson
58963 Willow Avenue   58863 Willow Avenue
Torrance CA 90501   Torrance CA 90501

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following error can be found:

•   In the COPY, "58863" should be "58963" as shown in the ORIGINAL.

One error can be found; therefore, choice **A** is the correct answer.

21. **ORIGINAL**   **COPY**
Marcus A. Johanssen   Marcus A Johanssen
21221 So Sequoia Lane   21221 S Sequoia Lane
Alhambra CA 91801   Alambra CA 91801

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following three errors can be found:

•   In the COPY, a period should be inserted after the middle initial "A." as shown in the ORIGINAL.
•   In the COPY, "S" should be "So" as shown in the ORIGINAL.
•   In the COPY, "Alambra" should be spelled "Alhambra" as shown in the ORIGINAL.

Three errors can be found; therefore, choice **C** is the correct answer.

22. **ORIGINAL**

Division Telephone Directory

<u>A</u>

Acsen, Bryon	8795
Anderson, Nicole.................	5963
Atkinson, Mitchell...............	8758

<u>B</u>

Barry, Iris...........................	5871
Bormon, Mary.....................	5289
Buccanon, Lance.................	5478

COPY

Division Telephone Directory

<u>A</u>

Accen, Bryon	8795
Anderson, Nicole.................	5963
Atkinson, Mitchell...............	8757

B

Barry, Iris...........................	5871
Bormon, Mary.....................	5289
Buccanon, Lance.................	5478

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following three errors can be found:

- In the COPY, "Accen" should be spelled "Acsen" as shown in the ORIGINAL.
- In the COPY, "8757" should be "8758" as shown in the ORIGINAL.
- In the COPY, "B" should be underlined, as shown in the ORIGINAL.

<u>Three</u> errors can be found; therefore, choice **C** is the correct answer.

23. **ORIGINAL**   **COPY**
    INTERVIEW SIGN-IN SHEET   *INTERVIEW SIGN-IN SHEET*
    Atkins, Marrise _____   Atkins, Marrise_____
    Bass, John_____   Bass, John _____
    Boden, Matthew _____   Boden, Mathew _____
    Cortez, Emily_____   Cortez, Emily _____
    Do, Kathrine _____   Do, Kathrine _____

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A. one.
B. two.
C. three.
D. none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following error can be found:

- In the COPY, "Mathew" should be spelled "Matthew" as shown in the ORIGINAL.

One error can be found; therefore, choice **A** is the correct answer.

24. **ORIGINAL**   **COPY**
    Jacob Patterson   Jacob Paterson
    14700 East 223rd Street   14700 East 223rd Street
    Carson CA 90746   Carson CA 90745

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A. one.
B. two.
C. three.
D. none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following two errors can be found:

- In the COPY, "Paterson" should be spelled "Patterson" as shown in the ORIGINAL.
- In the COPY, the figure "90745" should be "90746" as shown in the ORIGINAL.

Two errors can be found; therefore, choice **B** is the correct answer.

25. **<u>ORIGINAL</u>**   **<u>COPY</u>**
Estimated Cost per Year: Estimated Cost per Year:
2003 ....$123,548   2003 ....$123,548
2004 ....$121,295   2004 ....$121,295
2005 ....$148,587   2005 ....$148,587

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, no errors can be found.

<u>Zero</u> errors can be found; therefore, choice **D** is the correct answer.

26. **<u>ORIGINAL</u>**   **<u>COPY</u>**
Emanuel Hernandez   Emanuel Hernandez
2121 Overland Ave.   2122 Overland Ave.
Wilmington CA 90744   Wilmington CA 90744

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following error can be found:

- In the COPY, "2122" should be "2121" as shown in the ORIGINAL.

<u>One</u> error can be found; therefore, choice **A** is the correct answer.

27. **ORIGINAL**   **COPY**
Darrell Montgomery   Darrel Montgomery
62 East Jasmine Lane   62 East Jasmine Lane
San Diego CA 92173   San Diego CA 92173

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following error can be found:

- In the COPY, "Darrel" should be spelled "Darrell" as shown in the ORIGINAL.

One error can be found; therefore, choice **A** is the correct answer.

28. **ORIGINAL**   **COPY**
Holly Mason   Holly Mason
31331 Moon River Dr.   31131 Moon River Dr
Hollywood CA 90038   Hollywood CA 90038

The number of errors in the **COPY** when compared to the **ORIGINAL** is

A.   one.
B.   two.
C.   three.
D.   none of these.

ANSWER: When comparing the COPY to the ORIGINAL, the following two errors can be found:

- In the COPY, "31131" should be "31331" as shown in the ORIGINAL.
- In the COPY, a period should be inserted after "Dr." as shown in the ORIGINAL.

Two errors can be found; therefore, choice **B** is the correct answer.

29. **<u>ORIGINAL</u>**   **<u>COPY</u>**
    Maria Lopez   Marie Lopez
    14758 Elm Street   14758 Elm Street
    Long Beach, CA 90815   Long Beach. CA 90815

    The number of errors in the **COPY** when compared to the **ORIGINAL** is

    A.   one.
    B.   two.
    C.   three.
    D.   none of these.

    ANSWER: When comparing the COPY to the ORIGINAL, the following two errors can be found:

    - In the COPY, "Marie" should be spelled "Maria" as shown in the ORIGINAL.
    - In the COPY, the period after "Long Beach" should be a comma as shown in the ORIGINAL.

    <u>Two</u> errors can be found; therefore, choice **B** is the correct answer.

30. **<u>ORIGINAL</u>**   **<u>COPY</u>**
    Mr. and Mrs. Eugene Smith   Mr. and Mrs. Eugene Smith
    125 Wilmington St.   125 Wilmington St.
    Seattle, WA 98106   Seattle, WA 98106

    The number of errors in the **COPY** when compared to the **ORIGINAL** is

    A.   one.
    B.   two.
    C.   three.
    D.   none of these.

    ANSWER: When comparing the COPY to the ORIGINAL, no errors can be found.

    <u>Zero</u> errors can be found; therefore, choice **D** is the correct answer.

BASIC ARITHMETIC ABILITY

INSTRUCTIONS: To answer questions 31-45, select the ONE BEST answer from the choices provided.

NOTE: Typically, there are multiple ways of obtaining the correct answer to each question, only one of which is provided as the answer explanation. Use the math glossary on page 32 to help you define any terms with which you may be unfamiliar.

31.
```
            .782
          10.298
            .098
   +      20.120
```

A.   30.144
B.   30.198
C.   31.244
D.   31.298

ANSWER: The sum is 31.298; therefore, choice **D** is the correct answer.

EXPLANATION:

- To solve, set up the problem by aligning all decimal points. You may wish to add zero placeholders (shown in bold) to help ensure that the columns are aligned correctly (Step #1).

- Working right to left, add down each column, carrying values over to the next column as necessary. For example, in the farthest column to the right, the sum is 18. Leave only the 8 in that column and carry the 1 over to the next column to the left. Repeat for each column, making sure to carry down the decimal point in the appropriate column to maintain alignment, which results in 31.298 (Step #2).

STEP #1	*STEP #2*
	1 21
00.782	**00**.782
10.298	10.298
00.098	**00**.098
+20.120	+20.120
	31.298

32.   9876.4
      -           631.28

      A.   9245.12
      B.   9245.22
      C.   9246.32
      D.   9246.62

ANSWER: The difference is 9245.12; therefore, choice **A** is the correct answer.

EXPLANATION:
- To solve, set up the problem by aligning all decimal points and adding zero placeholders (shown in bold) as necessary. Working right to left, carry 1 over from the column to the left when the bottom number for a column is bigger than its top number (Step #1). For example, in the column farthest to the right, the 8 on the bottom is bigger than the 0 on the top, so you will need to carry 1 over from the column to the left, changing the 0 to 10 and the 4 to 3.

- Working right to left, solve by subtracting the bottom number in each column from the top one, making sure to carry down the decimal point in the appropriate column to maintain alignment, which results in 9245.12 (Step #2)

STEP #1   *STEP #2*

```
   3 10               3 10
9876.40            9876.40
- 631.28           - 631.28
                     9245.12
```

33.
$$
\begin{array}{r}
582 \\
\times \quad 874 \\
\hline
\end{array}
$$

   A.   401,472
   B.   498,257
   C.   508,668
   D.   592,594

ANSWER: 582 multiplied by 874 is <u>508,668</u>; therefore, choice **C** is the correct answer.

EXPLANATION:

- To solve, working from **right to left**, multiply each digit in the number 582 by the 4 in the number 874, making sure to carry values over to the next column as necessary, for an answer of 2328 (Step #1).

- Since the 7 is in the second column from the right of the whole number 874 (also called the "tens" column), add a zero placeholder (shown in bold) in the first column from the right (also called the "ones" column) of the answer, so that the answer is aligned with the 7. Multiply each digit in the number 582 by the 7 in the number 874, making sure to carry values over to the next column as necessary, for an answer of 4074**0** (Step #2).

- Since the 8 is in the third column from the right of the whole number 874 (also called the "hundreds" column), add zero placeholders (shown in bold) in the "ones" and "tens" columns of the answer, so that the answer is aligned with the 8. Multiply each digit in the number 582 by the 8 in the number 874, making sure to carry values over to the next column as necessary, for an answer of 4656**00** (Step #3).

- Add the answers of the three steps above, which results in 508,668 (Step #4).

STEP #1	*STEP #2*	*STEP #3*	*STEP #4*
3	5 1	6 1	
582	582	582	582
x 874	x 874	x 874	x 874
2328	2328	2328	2328
	4074**0**	4074**0**	4074**0**
		4656**00**	+4656**00**
			508668

34.   23478 ÷ 6 =

   A.   3903
   B.   3913
   C.   3923
   D.   3943

   ANSWER: 23478 ÷ 6 is <u>3913</u>; therefore, choice **B** is the correct answer.

   EXPLANATION:
   - To solve, working from left to right, divide each digit in the number 23478 by 6. Since 6 is bigger than the first digit in 23478, move over one column and divide the first 2 digits of the number 23478 by 6. 23 divided by 6 results in an answer of 3, which is placed above the last digit of the number that was divided, which is above the 3 in the number 23. Multiply 6 by 3, and place the answer (18) underneath the number that was divided (23), and subtract for an answer of 5 (Step #1).

   - Carry down the next value to be divided in 23478, which is 4, and place it next to the 5 from Step #1. Divide 54 by 6, which results in an answer of 9, which is placed above the 4 in 23478. Multiply 6 by 9, and place the answer (54) underneath the number that was divided (54), and subtract for an answer of 0 (Step #2).

   - Repeat with the remaining values in 23478 until no remaining value is left, which results in the whole number 3913 (Step #3).

STEP #1	*STEP #2*	*STEP #3*
3	39	3913
6⟌23478	6⟌23478	6⟌23478
-18	-18	-18
5	54	54
	- 54	- 54
	0	07
		- 6
		18
		- 18
		0

35. $$\frac{5}{6} - \frac{7}{12}$$

A. 1/4
B. 3/5
C. 5/6
D. 7/9

ANSWER: 5/6 – 7/12 is <u>1/4</u>; therefore, choice **A** is the correct answer.

EXPLANATION:
- To solve, find the least common multiple (LCM) for the denominator of each fraction. The LCM is the smallest non-zero number that is a multiple of both denominators. In this problem, the LCM is 12.

- Since 7/12 already has a denominator of 12, only 5/6 needs to be converted to have a denominator of 12. Since the LCM divided by the denominator is 2, multiply both the numerator and denominator in 5/6 by 2, so that the fraction becomes 10/12 (Step #1).

- Subtract 7/12 from 10/12 (by subtracting the numerators), for a difference of 3/12 (Step #2).

- Simplify 3/12 by dividing both the numerator and denominator each by the numerator value (3) to equal 1/4 (Step #3).

STEP #1	_STEP #2_	_STEP #3_
$\frac{5 \times 2}{6 \times 2} = \frac{10}{12}$	$\frac{10}{12} - \frac{7}{12} = \frac{3}{12}$	$\frac{3 \div 3}{12 \div 3} = \frac{1}{4}$

36. $\dfrac{3}{4}$ x $\dfrac{4}{9}$

    A.   1/3
    B.   2/7
    C.   3/5
    D.   4/9

ANSWER: 3/4 multiplied by 4/9 is 1/3; therefore, choice **A** is the correct answer.

EXPLANATION:
- To solve, multiply the numerators of each fraction (3 x 4 = 12) and the denominators of each fraction (4 x 9 = 36) to equal 12/36 (Step #1).

- Simplify 12/36 by dividing the numerator and denominator each by the numerator value (12), to equal 1/3.

STEP #1   *STEP #2*

$$\dfrac{3 \times 4}{4 \times 9} = \dfrac{12}{36} \qquad \dfrac{12 \div 12}{36 \div 12} = \dfrac{1}{3}$$

37.   _____ is 90% of 50.

    A.   40
    B.   43
    C.   45
    D.   47

ANSWER: <u>45</u> is 90% of 50; therefore, choice **C** is the correct answer.

EXPLANATION:
- To solve, convert 90% to a decimal by dividing 90 by 100. Set up the problem by adding a decimal point and a zero placeholder (shown in bold), to make 90 into 90.**0**. Next, determine the decimal place for the answer by counting the number of zero placeholders you added to 90 to make it divisible by 100. Since one zero was added to 90, count backwards from right to left one decimal place to convert the answer to .9 (Step #1).

- Multiply 50 by .9. Add a decimal point and a zero placeholder to make 50 (shown in bold) into 50.**0** to match the number of decimals in the number it is being multiplied with (.9) and vertically align the decimal points in the two numbers. Count the number of decimal places to the right of the decimal point in 50.0 and .9 (which equals two) to determine that the answer should also have two decimal places. Count backwards from right to left two places and insert a decimal point, which results in 45.00, or 45 (Step #2).

STEP #1   *STEP #2*

```
          .9
100 90.0              50.0
    -90.0          x    .9
        0           45.00
```

38.   16 is _____ % of 64.

        A.   22
        B.   23
        C.   24
        D.   25

ANSWER: 16 is <u>25</u>% of 64; therefore, choice **D** is the correct answer.

EXPLANATION:
- To solve, divide 16 by 64. Set up the problem by adding a decimal point and zero placeholders (shown in bold), to make 16 into 16.**00**. Next, determine the decimal place for the answer by counting the number of zeros you added to 16 to make it divisible by 64. Since two zeros were added to 16, count backwards from right to left two decimal places to convert the answer to .25 (Step #1).

- Multiply .25 by 100 to convert to a percent. Add a decimal point and zero placeholders to make 100 (shown in bold) into 100.**00** to match the number of decimals in the number it is being multiplied with and vertically align the decimal points in the two numbers. Count the number of decimal places to the right of the decimal point in 100.00 and .25 (which equals four) to determine that the answer should also have four decimal places. Count backwards from right to left four places and insert a decimal point, which results in 25.0000, or 25% (Step #2).

STEP #1   *STEP #2*

```
            .25
      64 | 16.00            100.00
         -12.80          x      .25
           3.20             50000
          -3.20          + 20000
              0            25.0000
```

39. 124 is 62% of _____.

    A. 190
    B. 195
    C. 200
    D. 215

ANSWER: 124 is 62% of <u>200;</u> therefore, choice **C** is the correct answer.

EXPLANATION:

- To solve, convert 62% to a decimal by dividing 62 by 100. Set up the problem by adding a decimal point and zero placeholders (shown in bold), to make 62 into 62.**00**. Next, determine the decimal place for the answer by counting the number of zero placeholders you added to 62 to make it divisible by 100. Since two zeros were added to 62, count backwards from right to left two decimal places to convert the answer to .62 (Step #1).

- Divide 124 by .62. Set up the problem by converting the decimal to a whole number by moving the decimal point to the right two places. .62 becomes the whole number 62. Move the decimal place in 124 the same number of places to the right so that 124 becomes 12400. Divide 12400 by 62 which results in 200 (Step #2).

<p style="text-align:center">STEP #1   STEP #2</p>

$$
\begin{array}{r}
.62 \\
100\overline{)62.00} \\
-60.0 \\
\hline
2.00 \\
-2.00 \\
\hline
0
\end{array}
\qquad
\begin{array}{r}
200 \\
62\overline{)12400} \\
-124 \\
\hline
00
\end{array}
$$

40.   4 days   13 hours   10 minutes
       - 2 days   16 hours   40 minutes

    A.   1 day, 11 hours, 30 minutes
    B.   1 day, 20 hours, 30 minutes
    C.   2 days, 3 hours, 30 minutes
    D.   2 days, 13 hours, 10 minutes

ANSWER: The difference is <u>1 day, 20 hours, 30 minutes</u>; therefore, choice **B** is the correct answer.

EXPLANATION:
- To solve, remember that there are 60 minutes in 1 hour and 24 hours in one day. Notice that in the columns for the minutes and hours measurements, the top value is less than the bottom value (i.e., 10 minutes is less than 40 minutes and 13 hours is less than 16 hours). To subtract, you will need to carry values over from larger left columns to smaller right columns so that the top values are bigger than the bottom values.

- Borrow 1 hour (60 minutes) from the hours measurement and carry over to the minutes measurement. 10 minutes becomes 70 minutes and 13 hours becomes 12 hours (Step #1).

- Borrow 1 day (24 hours) from the days measurement and carry over to the hours measurement. 13 hours becomes 36 hours and 4 days becomes 3 days (Step #2).

- With the top measurement now converted to 3 days, 36 hours, 70 minutes, you may proceed in subtracting minutes from minutes, hours from hours, and days from days, with the outcome of 1 day, 20 hours, 30 minutes (Step #3).

STEP #1			*STEP #2*			*STEP #3*		
4days	12hrs	70min	3days	36hrs	70min	3days	36hrs	70min
- 2days	16hrs	40min	- 2days	16hrs	40min	- 2days	16hrs	40min
						1 day	20hrs	30min

41.   4 feet 3 ¾ inches
           9 feet 5 ½ inches
       11 feet 7 ¼ inches
    +   6 ¾ inches

    A.   24 feet, 3½ inches
    B.   25 feet, 11¼ inches
    C.   26 feet, 1¼ inches
    D.   26 feet, 11½ inches

ANSWER: The sum is <u>25 feet, 11¼ inches</u>; therefore, choice **B** is the correct answer.

EXPLANATION:
- To solve, remember that there are 12 inches in 1 foot and that you add from right to left, carrying over excess values to the next column to the left.

- Add the "inches" measurements for a total of 23 ¼ inches (Step #1).

- Convert the 23 ¼ inches to 1 foot, 11¼ inches and carry the 1 foot over to the "feet" measurements.

- Add the "feet" measurements for a total of 25 feet (Step #2). The total of all measurements, then, is 25 feet, 11¼ inches.

<div align="center">

STEP #1   *STEP #2*

1 foot

4 feet 3 ¾ inches   4 feet 3 ¾ inches
9 feet 5 ½ inches   9 feet 5 ½ inches
11 feet 7 ¼ inches   11 feet 7 ¼ inches
+   6 ¾ inches   +   6 ¾ inches
     23 ¼ inches   25 feet 11 ¼ inches

</div>

42.   65.
        .7
      365.1325
        .1158
  + 2655.
  _____

   A.   2,085.9483
   B.   2,058.9483
   C.   3,058.9483
   D.   3,085.9483

ANSWER: The sum is 3,085.9483; therefore, choice D is the correct answer.

EXPLANATION:
- Set up the problem by adding zero placeholders (shown in bold) as necessary to ensure that columns and decimal points are aligned appropriately (Step #1).

- Working right to left, add each column, making sure to carry values over to the next column to the left as appropriate (Step #2).

STEP #1	_STEP #2_
	_1 1 1 1_
0065.**0000**	**00**65.**0000**
0000.7**000**	**0000**.7**000**
0365.1325	**0**365.1325
0000.**1158**	**0000**.**1158**
+2655.**0000**	+2655.**0000**
	3085.9483

28

43.   12.800 − 8.593 =

A.   2.207
B.   4.207
C.   4.327
D.   5.207

ANSWER: The difference is 4.207; therefore, choice **B** is the correct answer.

EXPLANATION:
- Set up the problem by lining numbers up vertically, aligning all decimal points (Step #1).

- Working right to left, set up the problem for solving by carrying values over only when the top value for a column is less than its bottom value (Step #2).

- Subtract all values to determine the difference (Step #3).

STEP #1   *STEP #2*   *STEP #3*

                    7 9 10   7 9 10
12.800   12.800   12.800
− 8.593   − 8.593   − 8.593
                                        4.207

44.   32.5
       ×   5

       A.   162.5
       B.   163
       C.   164.5
       D.   165

ANSWER: 32.5 multiplied by 5 is <u>162.5</u>; therefore, choice **A** is the correct answer.

EXPLANATION:
Working from right to left, multiply 32.5 by the factor "5." Insert the decimal point in the product one place from the right, as the factors 32.5 and 5 have a total of <u>one</u> decimal place (Step #1).

STEP #1

              32.5
       x   5
           162.5

45. 2610 ÷ 18 =

A. 90.
B. 125.
C. 130.
D. 145.

ANSWER: 2610 divided by 18 is <u>145</u>; therefore, choice **D** is the correct answer.

EXPLANATION:
- Set up the problem by placing the number to be divided (2610) inside the bar, and the divisor (18) to the left of the vertical bar (Step #1).

- Determine how many times 26 can be divided by 18 and place the number (1) over the 26. Multiply the number (1) by the divisor (18), and subtract the result (18) from the number divided (26) to equal the remainder 8 (Step #2).

- Carry down the next digit in 2610 (1) by placing it next to the remainder from Step #2, to equal 81 (Step #3).

- Repeat Step #2 and Step #3 until all the possibilities of division have been exhausted and there are no other numbers to be divided (Step #4).

STEP #1	*STEP #2*	*STEP #3*	*STEP #4*

$$18\overline{)2610}$$

$$\begin{array}{r} 1 \\ 18\overline{)2610} \\ -18 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 1 \\ 18\overline{)2610} \\ -18 \\ \hline 81 \end{array}$$

$$\begin{array}{r} 145 \\ 18\overline{)2610} \\ -18 \\ \hline 81 \\ -72 \\ \hline 90 \\ -90 \\ \hline 0 \end{array}$$

GLOSSARY OF MATHEMATICAL TERMS

Area: The number of square units that covers a shape or figure.

Denominator: The bottom part of a fraction. (Example: in the fraction ¾, 4 is the denominator.)

Digit: The ten numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. The number 14 has two digits: 1 and 4.

Difference: The result of subtracting one number from another.

Divisor: In a division problem, the number that is divided into another (For example when dividing 4 into 20, the 4 would be the divisor, as it is used to divide the number 20 into five parts).

Factor: One of two or more numerical values that are multiplied together to yield a product.

Fraction: A number expressed in terms of a numerator and denominator.

Least Common Multiple: The smallest, non-zero multiple of the denominators of two or more fractions.

Numerator: The top part of a fraction. (Example, in the fraction ¾ 3 is the numerator).

Operation: Any one of the basic arithmetic functions of addition, subtraction, multiplication, or division.

Product: The result of two numbers being multiplied together.

Quotient: The result of dividing one number into another.

Sum: The result of adding together two or more numbers.