NS500
POCKET
PRINTER
INSTRUCTIONS.
National Semiconductor
PRINTING CALCULATOR INSTRUCTIONS.

NS500
POCKET PRINTER
TABLE OF CONTENTS

LOW BATTERY: DIM DISPLAY OR ERRATIC PRINT .................. 1
RECOMMENDED PAPER .............................................. 1
INSTALLING THE PAPER ............................................ 2
NON-PRINT SWITCH ................................................ 2
DECIMAL SWITCH .................................................. 2
NUMERAL AND DECIMAL KEYS ....................................... 2
CLEAR ENTRIES, CLEAR ALL CE/C ................................ 3
ADDING MACHINE KEYS ............................................. 3
ADDITION ........................................................... 4
SUBTRACTION ...................................................... 4
REPEAT ADDITION/SUBTRACTION .................................. 5
MULTIPLICATION .................................................... 5
DIVISION ............................................................ 6
MULTIFACTOR MULTIPLICATION/DIVISION ......................... 7
CONSTANT MULTIPLICATION ....................................... 8
CONSTANT DIVISION ............................................... 8
PERCENTAGES: % ................................................... 9
THE MEMORY ...................................................... 10
MIXED CALCULATIONS .............................................. 10
INVALID KEY SEQUENCES WHICH INVERT DIVISION ENTRIES .... 11
EXAMPLES OF COMMON BUSINESS PROBLEMS .................. 11
IMPORTANT—READ BEFORE USING YOUR CALCULATOR

Your batteries come from the factory uncharged. It is important to the long life of your batteries to fully charge them before using your calculator for the first time. Plug it in to charge them.

A full charge takes about 15 hours. Shut the on/off switch off to charge batteries faster. Don’t worry about overcharging your batteries. If you leave it plugged in for more than 15 hours no harm will be done, but it is recommended that you do not leave your calculator plugged into the charger for long periods of time. The batteries lose their storage capability if not allowed to occasionally discharge.

LOW BATTERY: DIM DISPLAY OR ERRATIC PRINT

When the display dims or erroneous symbols or dots print, the batteries need charging. Do not continue to use the calculator without charging as a totally discharged battery situation should be avoided for longest use of the batteries. Charge them for 30 minutes with the power switch off; then, you may use it in the non-print mode while the batteries finish charging . . . about 8 hours of charging time . . . while in use (5 hours of charging time if power switch is turned off).

Charge your batteries for the full 15 hours with the on/off switch off if your batteries are in a totally discharged state.

IMPORTANT: Do not operate your printing calculator without paper because doing so will possibly damage the printing mechanism.

PAPER SIZE: Width 1.5 in. (38mm).

PAPER TYPES: NS038 paper from National Semiconductor or 1½ inch thermal paper available at retail stores which is larger in diameter requiring the larger paper tray. Other paper may damage your printer.

Your calculator uses specially treated thermal paper. Store paper in a cool, dark place. Purchase replacement paper where you bought your calculator or order by mail or phone from:

NSC
MS 10A173
1120 Kifer Road
Sunnyvale, California 94086
Telephone: 408-737-3623
INSTALLING THE PAPER

1. Remove the plastic paper tray holder from the back of the calculator. An extra tray to accommodate the larger core size paper was included in your purchase of your calculator.

2. Be sure that the paper unrolls from the bottom of the roll and not the top as shown below; otherwise, no printing will occur.

3. Insert the paper into the paper feed path (slot in back of the calculator). Nudge the paper tape with your fingertips into the paper feed path as you press \[\uparrow\] , the paper advance key. Do this until the paper feeds through. Do not stick long fingernails into the mechanism.

4. Replace the plastic paper tray. If your replacement paper is the larger core type, use the larger plastic paper tray included with your calculator.

If the Non Print switch is set at NP, printing will not occur.

NON-PRINT SWITCH
Put this switch in the NP position to turn off the printer and use only the display. This feature will allow you to save paper when you have no need for a tape.

DECIMAL SWITCH
THE FLOATING DECIMAL SETTING IS FOR MAXIMUM DECIMAL NUMBERS IN THE ANSWER
Set the decimal switch at F for a floating decimal. A floating decimal system automatically puts the decimal behind numbers as you key them into the calculator until you press the decimal point key \[\cdot\]. When the \[\cdot\] is pressed the decimal point is fixed at that place and further numbers keyed into the calculator during that entry are entered as decimal fractions, to the right of the decimal point. Results are printed with as many decimal places as capacity permits. Set the decimal at the 2 place setting and results are printed and rounded off at two decimal places.

NUMERAL AND DECIMAL KEYS
The numeral keys are numbered 0 to 9 and double zero. The double zero key, \[00\] , is for quick dollars and "no cents" entries or for entries with many zeros.

The decimal key is pressed whenever a number being entered contains a decimal. It is not necessary to press \[\cdot\] after entering a whole number.

Numbers may be entered with up to 12 digits.
CLEAR ENTRIES, CLEAR ALL CE/c
This key is labeled CE, an abbreviation for clear entry, and C, an abbreviation for clear all.
Press CE/c once directly following a mistaken key depression and the depression is erased. Pending multiplication or division problems, the adding machine and the memory are not cleared. Only the mistaken entry is cleared. No printing occurs. 0 is displayed.
Press CE/c twice to clear the entire calculator. OC prints.
ERROR CONDITION: E prints
Press CE/c twice to clear an error condition which occurs when results exceed 12 whole number digits or when key is pressed too fast. An arrow appears to indicate the error condition. The keys will not operate until the error condition is cleared.

ADDING MACHINE KEYS:
+ Press to add. Repeated depressions continue to add the same number which saves time, eliminates re-entry of the same number when it appears repeatedly. The number being added prints.
- Press to subtract the subtrahend or bottom number, as it’s written in subtraction. The minuend, or top number, is entered on +. Repeated depressions of — cause repeat subtraction.

T Total key prints the contents of, and also clears the adding machine.*

#/S Non-Add and Subtotal key prints the contents of, but does not clear, the adding machine.* This allows you to check your accumulation at any intermediate point. The non-add, #, function is performed by pressing #/S directly following a numeral key entry. This function is for printing account numbers or other identifying numbers on the tape. See second example that follows.

*Pressing S or T clears any pending multiplication or division unless the S or T depression directly precedes =. Division problems are inverted under certain circumstances in which division is combined with the use of these keys. See Section INVALID KEY SEQUENCES WHICH INVERT DIVISION.
**ADDITION**

To perform addition:
1. Press the **T** key to clear the adding machine.
2. Enter the first figure to be added, press **+**. (Continue to enter addends and touch the **+** key.)
3. Press **#/S** to see a subtotal printed. Press **T** to print the total and clear the adding machine.

**Example**

```
12.20
+ .41
+ 21.00
```

```
33.61
```

Set decimal switch: 2 place setting

**Sample Tape**

```
003
```

**Comments**

Unnecessary if adding machine is clear.

**SUBTRACTION**

To perform subtraction:
1. Press the **T** key to clear the adding machine.
2. Enter the top number in the subtraction problem (minuend), press **+**.
3. Enter the second number (subtrahend), press **-**.
4. Press **#/S** to see a subtotal printed. Press **T** to print the total answer and clear the adding machine. Negative totals and subtotals print with a negative sign to the immediate left of the most significant digit so that you can't miss it.

**Example**

```
55.55
- 1.11
```

```
54.44
```

Set decimal switch: 2 place setting

**Sample Tape**

```
003
```

**Comments**

Unnecessary if adding machine is clear.

**Example: Add the following charges made on account #12345.**

```
$ 5.75
6.00
23.76
```

Set decimal switch: 2 place setting

**Sample Tape**

```
003
```

**Comments**

Performs non-add function

$ 5.75
6.00
23.76

Subtotals addition
```

```
35.51
```

Totals addition

```
003
```

```
REPEAT ADDITION/SUBTRACTION
Multiple depressions of the + or − keys will repeatedly add or subtract the last amount printed on the tape.

Example

\[
\begin{array}{c}
123.45 \\
+ 123.45 \\
+ 123.45 \\
- 456.78 \\
- 456.78 \\
\hline
-543.21
\end{array}
\]

Set decimal switch: 2 place setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>123.45</td>
<td>+</td>
<td>000 *</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>123.45 +</td>
</tr>
<tr>
<td></td>
<td>+</td>
<td>123.45 +</td>
</tr>
<tr>
<td>456.78</td>
<td>−</td>
<td>456.78 −</td>
</tr>
<tr>
<td></td>
<td>−</td>
<td>456.78 −</td>
</tr>
<tr>
<td></td>
<td>T</td>
<td>543.21 *</td>
</tr>
</tbody>
</table>

Error Correction
The repeat addition/subtraction feature may be used to correct erroneous + or − key depressions. If you press + by mistake, press − to cancel it and vice versa.

MULTIPLICATION
To multiply:
1. Press T to clear any multiplication or division previously started and not yet terminated by pressing =. This step is not always necessary.
2. Enter the first number for multiplication, press ×.
3. Enter the second number (multiplier), press =. The answer prints.

Example

\[
\begin{array}{c}
2.5 \times 1.25 = 3.125 \text{ rounded off to } 3.13
\end{array}
\]

Set decimal switch: 2 place setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>2.5</td>
<td>\times</td>
<td>000 *</td>
</tr>
<tr>
<td>1.25</td>
<td>=</td>
<td></td>
<td>2.5 \times</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.25 =</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.13 *</td>
</tr>
</tbody>
</table>
**DIVISION**

To divide:
1. Press \( T \) to clear any multiplication or division previously started and not yet terminated by pressing \( = \). This step is not always necessary.
2. Enter the top number (dividend) for division; press \( \div \).
3. Enter the second number (divisor); press \( = \).
   The answer prints.

**Example**

\[ 1 \div 6 = 0.166666666 \]

Set decimal switch: F setting \( \frac{2}{3} \)

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>( \div )</td>
<td>0 ( \div )</td>
<td>0.166666666</td>
</tr>
<tr>
<td>6</td>
<td>=</td>
<td>If your answer is 0.17, the decimal setting instructions were not followed.</td>
<td>( 0.166666666 ) *</td>
</tr>
</tbody>
</table>

**MULTIFACTOR DIVISION**

Formulas for multifactor division are written in several different ways:

\[
\frac{144}{12} \div 2 = 6
\]

**Example**

\[ \frac{144}{12 \times 2} = 6 \]

Set decimal switch: F setting \( \frac{2}{3} \)

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>144</td>
<td>( \div )</td>
<td>0 ( \div )</td>
<td>0.166666666</td>
</tr>
<tr>
<td>12</td>
<td>( \div )</td>
<td>144 ( \div )</td>
<td>12 ( \div )</td>
</tr>
<tr>
<td>2</td>
<td>=</td>
<td>2 ( \div )</td>
<td>6 ( \div )</td>
</tr>
</tbody>
</table>
MULTIFACTOR MULTIPLICATION/DIVISION

To perform multifactor multiplication:
1. Enter the first number in multiplication; press \( \times \).
2. Enter the next factor; press \( \times \).
3. Continue to enter factors on the \( \times \) key.
4. Enter the last factor; press the \( = \) key.

Example
\[ 5 \times 2 \times 3 = 30 \]
Set decimal switch: 2 setting \( \quad \frac{2}{2} \)

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td></td>
<td>0.00 *</td>
</tr>
<tr>
<td>5</td>
<td>\times</td>
<td>5 \times</td>
</tr>
<tr>
<td>2</td>
<td>\times</td>
<td>2 \times</td>
</tr>
<tr>
<td>3</td>
<td>=</td>
<td>3 =</td>
</tr>
</tbody>
</table>

YOU MAY NOT MIX MULTIFACTOR MULTIPLICATION OR DIVISION WITH ADDITION/SUBTRACTION UNLESS THE T OR S • DEPRESSION DIRECTLY PRECEDES = ; otherwise, \( \times \) and \( \div \) depressions prior to pressing S or T are cleared.

*or MS or MT

Example: Correct Key Sequences For Previous Problem
\[ 5 \times 2 \times (4 + 3) \times 2 = 140 \]
Set decimal switch: 2 place setting \( \frac{2}{2} \)

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>0.00 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>\times</td>
<td>5 \times</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>\times</td>
<td>2 \times</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>+</td>
<td>Addition performed last</td>
<td>4.00 +</td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>3.00 +</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>=</td>
<td>7.00 *</td>
<td></td>
</tr>
</tbody>
</table>

OR

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>+</td>
<td>Addition performed first</td>
<td>4.00 +</td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>3.00 +</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>\times</td>
<td>7.00 *</td>
<td></td>
</tr>
</tbody>
</table>

Example: Invalid Key Sequence
Problem: \[ 5 \times 2 \times (4 + 3) \times 2 = 140 \]

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>0.00 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>\times</td>
<td>5 \times</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>\times</td>
<td>2 \times</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>+</td>
<td>Invalid Key Sequence</td>
<td>4.00 +</td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>3.00 +</td>
<td></td>
</tr>
<tr>
<td>T</td>
<td>\times</td>
<td>T clears pending operation</td>
<td>7.00 *</td>
</tr>
<tr>
<td>002</td>
<td>\times</td>
<td>7.00 \times</td>
<td></td>
</tr>
</tbody>
</table>

2 = See next example for correct sequence. 14.00 *
Example
Calculate the simple interest on a savings account in the amount of $1500 at an interest rate of .075 for 160 days. Base the calculation on a 360-day year.

\[
\text{Formula: } \frac{1500 \times 0.075 \times 160}{360} = \$50
\]

Set decimal switch: 2 place setting 2

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>(\times)</td>
<td>1500 (\times)</td>
</tr>
<tr>
<td>.075</td>
<td>(\times)</td>
<td>0.075 (\times)</td>
</tr>
<tr>
<td>160</td>
<td>(\div)</td>
<td>160 (\div)</td>
</tr>
<tr>
<td>360</td>
<td>=</td>
<td>360 =</td>
</tr>
</tbody>
</table>

\[
50.00 \ast
\]

CONSTANT MULTIPLICATION
The first number in multiplication is automatically stored in an internal memory of your calculator when the \(\times\) key is pressed. This number does not have to be entered again when it is necessary to multiply a constant number by many variable numbers.

To multiply by a constant:
1. Enter the constant, press \(\times\).
2. Enter the first number to be multiplied by the constant, press \(=\).
   - Prints first answer.
3. Enter the second number to be multiplied by the constant, press \(=\).
   - Prints second answer.
4. Continue to enter variable multipliers and press \(=\).

Example: Convert the following measurements from kilograms to pounds. One kilogram equals 2.2046 pounds.

<table>
<thead>
<tr>
<th>Kilograms</th>
<th>Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2</td>
<td>?</td>
</tr>
<tr>
<td>6.75</td>
<td>?</td>
</tr>
<tr>
<td>7.25</td>
<td>?</td>
</tr>
</tbody>
</table>

Set decimal switch: F setting 2

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2046</td>
<td>(\times)</td>
<td>5.2 (=)</td>
</tr>
<tr>
<td>6.75</td>
<td>(=)</td>
<td>11.46392 (*)</td>
</tr>
<tr>
<td>7.25</td>
<td>(=)</td>
<td>14.88105 (*)</td>
</tr>
</tbody>
</table>

Example: Calculate the simple interest on a savings account in the amount of $1500 at an interest rate of .075 for 160 days. Base the calculation on a 360-day year.

\[
\text{Formula: } \frac{1500 \times 0.075 \times 160}{360} = \$50
\]

Set decimal switch: 2 place setting 2

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>(\times)</td>
<td>1500 (\times)</td>
</tr>
<tr>
<td>.075</td>
<td>(\times)</td>
<td>0.075 (\times)</td>
</tr>
<tr>
<td>160</td>
<td>(\div)</td>
<td>160 (\div)</td>
</tr>
<tr>
<td>360</td>
<td>=</td>
<td>360 =</td>
</tr>
</tbody>
</table>

\[
50.00 \ast
\]

CONSTANT DIVISION
The second number (divisor) is automatically stored in an internal memory of your calculator. This number does not have to be entered again when it is necessary to divide many variable numbers by the constant number.

To divide by a constant:
1. Enter the first variable number, press \(\div\).
2. Enter the constant; press \(<\).
   - Prints the first answer.
3. Enter the second number to be divided by the constant; press \(<\).
   - Prints the second answer.
4. Continue to enter variable dividends and press \(<\).
Example: Convert the following measurements from pounds to kilograms. One kilogram equals 2.2046 pounds.

11.46 pounds = ? kilograms
14.88 pounds = ? kilograms
15.98 pounds = ? kilograms

Set decimal switch: F setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.46</td>
<td>÷</td>
<td>2.2046</td>
</tr>
<tr>
<td>2.2046</td>
<td>=</td>
<td>14.88</td>
</tr>
<tr>
<td>14.88</td>
<td>÷</td>
<td>2.2046</td>
</tr>
<tr>
<td>15.98</td>
<td>=</td>
<td></td>
</tr>
</tbody>
</table>

Example: Find the dollar amount of tax on a coat that costs $115.00. What is the cost of the coat including tax? The tax rate is 5%.

Set decimal switch: 2 place setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>÷</td>
<td>5%</td>
</tr>
<tr>
<td>5</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

Example: Find the amount of a 5% discount on a coat that is regularly priced at $115.00. What is the cost of the coat after the 5% discount?

Set decimal switch: 2 place setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>115</td>
<td>÷</td>
<td>5%</td>
</tr>
<tr>
<td>5</td>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

PERCENTAGES: %
The full featured % prints the add on amount and the net amount automatically when % is used instead of = to complete multiplication.

1. Enter the amount to be multiplied by a percentage; press ×.
2. Enter the percentage; press %.
   - Prints the result, c, of \( \frac{a \times b}{100} = c \)
3. Press +.
   - Prints the net amount, d, of \( \frac{a \times b}{100} + a = d \)
3a. or press –.
   - Prints the discounted net amount, d, of \( a - \frac{a \times b}{100} = d \)

To divide two amounts and see the answer expressed as a percentage:

1. Enter the top number (dividend); press divide.
2. Enter the second number (divisor); press %.
   - Prints the result of \( \frac{a}{b} \times 100 \)*.

*The % functions exactly like = with a division of products by 100 or multiplication of quotients by 100.
Example:
What percentage of 200 is 100? The answer is 50 percent.
Set decimal switch: 2 place setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>÷</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>%</td>
<td>This answer is read as 50 percent.</td>
</tr>
</tbody>
</table>

Sample Tape
100 ÷ 200%

**THE MEMORY**
"M" lights in the display when memory contains a number.

- **M+** Memory plus key adds or repeat adds if pressed repeatedly, into the memory just as + adds into the adding machine. The number being added prints.
- **M-** Memory minus key enters the subtrahend or bottom number, as it is written, in subtraction. It functions in relation to the memory the way − does in relation to the adding machine. Repeated depressions will cause repeat subtraction.
- **MS** Memory subtotal key prints the contents of, but does not clear, the memory. This allows you to check your accumulation at an intermediate point.
- **MT** Memory total key prints the contents of, and also clears the memory.

See examples of Common Business Problems as well as the example of percentage of increase or decrease that follows.

**MIXED CALCULATIONS**
One of the most frequently performed problems in business is percentage of increase or decrease. Your calculator was especially designed to handle these problems and other similar problems, such as percent mark on, with ease. Also see Section: EXAMPLES OF COMMON BUSINESS PROBLEMS.

---

Example: Percentage of Increase or Decrease
A sales manager needs to compare his sales volume this quarter, $2,162,500, with that of the last quarter, $1,950,400. How many percentage points did his sales increase?

**Formula:**

\[
\text{Percentage of Increase} = \left( \frac{\text{Current sales} - \text{Previous sales}}{\text{Previous sales}} \right) \times 100\%
\]

\[
\begin{align*}
\text{Current sales} & \ldots \ldots . \$2,162,500 \\
\text{Previous sales} & \ldots \ldots \quad - \quad 1,950,400 \\
\text{Difference} & \ldots \ldots \quad 212,100 \\
\end{align*}
\]

\[
\frac{212100}{1950400} = 10.87\% \text{ increase}
\]

Set decimal switch: 2 place setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2162500</td>
<td>M+</td>
<td>use 00 for quick entry</td>
</tr>
<tr>
<td>1950400</td>
<td>M-</td>
<td>IMPORTANT: THE</td>
</tr>
<tr>
<td>002</td>
<td>MT</td>
<td>DIVISION PROBLEM</td>
</tr>
<tr>
<td>002</td>
<td>%</td>
<td>IS INVERTED</td>
</tr>
</tbody>
</table>

The characteristic of your calculator which allows you to perform percentage of increase and decrease as shown above results in invalid key sequences when performing mixed calculations which do not require inversion of the dividend and divisor.

REMEMBER THIS RULE: You may mix addition/subtraction with two factor multiplication but not with division. **ENTRIES ON ÷ FOLLOWED BY THE KEY SEQUENCES LISTED BELOW CAUSE THE ENTRY MADE ON ÷ TO BE USED AS THE DIVISOR (NORMALLY THE SECOND NUMBER ENTERED FOR DIVISION). THE TAPE CLEARLY ILLUSTRATES THIS AS SHOWN IN THE EXAMPLE THAT FOLLOWS.**

---

10
INVALID KEY SEQUENCES WHICH INVERT DIVISION ENTRIES

- Operation Performed
  - The number printed upon depression of
    - The number printed upon depression of
      - The number printed upon depression of
        - The number printed upon depression of
          - The number printed upon depression of

 Examples of Common Business Problems

Double Declining Balance Depreciation

Depreciate the value of a $5,000 asset 20% every year. Show the amount of depreciation and new value of the asset for each year.

Set decimal switch: 2 place setting \( \frac{2}{5} \)

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>.2</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>#/S</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Etc.

Example: Shows a fraction whose numerator is a sum. The addition is performed first.

\[
\frac{15}{2 + 3} = 3 \]

Set decimal switch: 2 place setting \( \frac{2}{5} \)

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>+</td>
<td>Records 5 as the</td>
</tr>
<tr>
<td>T</td>
<td></td>
<td>constant divisor</td>
</tr>
<tr>
<td>15</td>
<td>=</td>
<td>Divides 15 by the</td>
</tr>
<tr>
<td></td>
<td></td>
<td>recorded constant, 5</td>
</tr>
<tr>
<td>5.00</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>5.00</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[
15 + \\
5.00 = \\
3.00 \times 11
\]
Depreciation — Sum of Years Digits Method

Determine the amount of depreciation for each year for 10 years on an asset with $5,000 value. Accumulate each yearly depreciation amount. The total should equal the asset value. This total verifies that the answers are correct. Sum of 10 Years’ Digits =

\[1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55\]
Set decimal switch: 2 place setting

Enter Press Sample Tape

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td>5000</td>
<td>÷</td>
<td>5000 ÷ 55</td>
</tr>
<tr>
<td>55</td>
<td>×</td>
<td>55 × 10 =</td>
</tr>
<tr>
<td>10</td>
<td>=</td>
<td>909.09 *</td>
</tr>
<tr>
<td>9</td>
<td>=</td>
<td>818.18 *</td>
</tr>
<tr>
<td>8</td>
<td>=</td>
<td>727.27 *</td>
</tr>
<tr>
<td>7</td>
<td>=</td>
<td>636.36 *</td>
</tr>
<tr>
<td>6</td>
<td>=</td>
<td>545.45 *</td>
</tr>
<tr>
<td>5</td>
<td>=</td>
<td>454.55 *</td>
</tr>
<tr>
<td>4</td>
<td>=</td>
<td>363.64 *</td>
</tr>
<tr>
<td>3</td>
<td>=</td>
<td>272.73 *</td>
</tr>
<tr>
<td>2</td>
<td>=</td>
<td>181.82 *</td>
</tr>
<tr>
<td>1</td>
<td>=</td>
<td>90.91 *</td>
</tr>
<tr>
<td>T</td>
<td></td>
<td>010</td>
</tr>
</tbody>
</table>

PRORATION

Determine the percentage of departmental sales to total sales of the company. Verify your answers by accumulating them and checking that the sum equals 100% or nearly 100%.

Dept. A $ 123K 789 ÷ 1368 = answer No. 1 = 57.68%
Dept. B $ 456K 456 ÷ 1368 = answer No. 2 = 33.33%
Dept. C $ 789K 123 ÷ 1368 = answer No. 3 = 8.99%

\[\frac{1,368K}{\text{total sales of company}} = 100\%\]

Set decimal switch: 2 place setting
Comments
% M+
% M+
MT
Enter Press Comments Sample Tape Example: Invoicing
0. C
123 + 123.00 + 12 items @ $1.25 = 15.00
456 + 456.00 +
789 + 789.00 +
1368.00 + 5 items @ 5.25 = 26.25
+ 1368.00 =
= 1.00 *
This two step key sequence establishes 1368 as a constant divisor

123 % M+ 123 ÷ 1368.00% 29.95 amount of invoice
456 % M+ 8.99 \ Add individual percentages into memory for the check
789 % M+ 5.25 =
MT 33.33 \ to 100%.

Example: Invoicing
12 items @ $1.25 = 15.00
5 items @ 5.25 = 26.25
Credit 6 items @ 2.00 = −12.00
Set decimal switch: 2 place setting

Enter Press Sample Tape
100.00 *I
003

13
CHAIN DISCOUNTS
A retailer wants to find the new selling price of an item discounted by 2%, 5%, and 8%. The old selling price is $69.95.

Set decimal switch: 2 place setting

<table>
<thead>
<tr>
<th>Enter</th>
<th>Press</th>
<th>Sample Tape</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.00 *</td>
</tr>
<tr>
<td>69.95</td>
<td>x</td>
<td>69.95 x</td>
</tr>
<tr>
<td>2</td>
<td>%</td>
<td>1.40 /</td>
</tr>
<tr>
<td>5</td>
<td>%</td>
<td>68.55 - %</td>
</tr>
<tr>
<td>8</td>
<td>%</td>
<td>3.43 /</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65.12 - %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65.12 x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.21 /</td>
</tr>
<tr>
<td></td>
<td></td>
<td>59.91 - %</td>
</tr>
</tbody>
</table>

COMBINED ADD-ON AND DISCOUNT PROBLEM
Given: 15 items @ 7.50
5 items @ 9.00
Discount rate = 4½%
Tax rate = 5%
Freight charge: $8.75

Find: Individual extensions (items times price)
Discount amount
Net amount after discount
Tax amount
Net billing plus freight

Set decimal switch: 2 place setting
**DIRECT DOLLAR DISTRIBUTION**

Distribute $5000 expenses on the basis of each department's sales. Accumulate each individual distributed amount and verify the answers by checking that the sum equals $5000 or nearly $5000.

- **Department A**......17,252
- **Department B**......12,123
- **Department C**......999

### Enter Press Comments

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17252</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>12123</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>999</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>17252</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>12123</td>
<td>T</td>
<td></td>
</tr>
<tr>
<td>999</td>
<td>T</td>
<td></td>
</tr>
</tbody>
</table>

Set decimal switch: F setting

**Sample Tape**

```
0 *
000
17252 +
12123 +
999 +
30374 *
003
30374 +
30374 =
1 *

Decimal must be set at F for accuracy in your answers.

5000 =
30374 =
0.1646144729 *
0.1646144729 × 17252 =
2839.92888647 *
2839.92888647 +
0.1646144729 × 12123 =
1995.62125496 *
1995.62125496 +
0.1646144729 × 999 =
164.449858427 *
164.44985842 +
4999.99999985 *
003
```

15