### 1-Variable Statistics

1. Enter STAT1 mode.  
   \[ \text{MODE} \rightarrow [\text{STAT}1] \]
2. Clear registers.  
   \[ \text{2ND} \rightarrow [\text{CSR}] \]
3. Enter data. Example:  
   \[ 2 \sum+4 \rightarrow [\text{FREQ}] \rightarrow 2 \]
   Data set is 2, 4, 4, 7.
4. View results:  
   \begin{align*}
   \text{Mean} & \quad \bar{x} \quad 4.25 \\
   \text{Pop. Std. Deviation} & \quad \sigma x n \quad 1.785357107 \\
   \text{Variance} & \quad \text{Var} x \quad 4.25 \\
   \text{etc.} & \quad \text{n} \quad 4.
   \end{align*}

To delete a data value, enter the number as it was entered and then press \[ \sum- \]. To include extra data, enter each new value as in step 3.

**Note:** Exiting STAT1 mode deletes the data set.

### 2-Variable Statistics

1. Enter STAT2 mode.  
   \[ \text{MODE} \rightarrow [\text{STAT}2] \]
2. Clear registers.  
   \[ \text{2ND} \rightarrow [\text{CSR}] \]
3. Enter data. Example:  
   \[ 2 \rightarrow [a] \rightarrow 3 \rightarrow [b] \rightarrow \sum+ \]  
   Data set is (2,3), (4,5), (4,5), (7,8).
4. View results:  
   \begin{align*}
   \text{Mean} \quad x & \quad 4.25 \\
   \text{Pop. Std. Deviation} \quad \sigma x n & \quad 1.785357107 \\
   \text{Variance} \quad \text{Var} x & \quad 4.25 \\
   \text{Correlation} \quad \text{Corr} & \quad 1. \\
   \text{etc.} & \quad \text{n} \quad 4.
   \end{align*}

5. For regression line:  
   \begin{align*}
   \text{trial} y \rightarrow [x] & \quad (\text{predicted} \ x \ \text{shown}) \\
   \text{trial} x \rightarrow [y] & \quad (\text{predicted} \ y \ \text{shown})
   \end{align*}

To delete a data point, enter the (x,y) values as they were entered and then press \[ \sum- \]. To include extra data, enter each new data point as in step 3.

**Note:** Exiting STAT2 mode deletes the data set.

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### Number Base Conversions

1. Press \[ \text{MODE} \] followed by the key for the starting number base: \[ \text{[Dec]}, \text{[Bin]}, \text{[Oct]}, \text{or [Hex]} \].
2. Enter the number.
3. Press \[ \text{MODE} \] followed by the key for the ending number base.

**Note:** In Bin, Oct, or Hex modes, you can use \(+, -, \times, +, \text{AND, OR, XOR, XNOR, NOT, or Neg}\) in a calculation.

### Probability

- **Permutations**  
  Subset order is important.  
  \[ n \rightarrow [a] \rightarrow [r] \rightarrow [b] \rightarrow [nPr] \]
- **Combinations**  
  Subset order is unimportant.  
  \[ n \rightarrow [a] \rightarrow [r] \rightarrow [b] \rightarrow [nCr] \]
- **z Score**  
  Express measurement as number of standard deviations.  
  \[ (\text{measurement} - \text{mean}) \rightarrow [\pm] \rightarrow \text{standard deviation} \rightarrow = \]
- **Normal Curve**  
  Areas (must be in a STAT mode)  
  \[ z \rightarrow [P(t)] \ (\text{Area to left of} \ z) \]
  \[ z \rightarrow [Q(t)] \ (\text{Area to right of} \ z) \]
  \[ z \rightarrow [R(t)] \ (\text{Area between mean and} \ z) \]

*These are not applicable in Bin, Oct, or Hex modes.*
# COLLEGIATE Quick Reference Card

<table>
<thead>
<tr>
<th>Function/Comments</th>
<th>Example</th>
<th>Press</th>
<th>Display</th>
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</thead>
<tbody>
<tr>
<td><strong>Fractions</strong></td>
<td>Calculate $2 \frac{3}{8} - \frac{3}{4}$</td>
<td>2 [a+b/c] 3 [a+b/c] 8 [−] 3 [a+b/c] 4 =</td>
<td>2.3 $\pm$ 8.</td>
</tr>
<tr>
<td>Convert to improper fraction.</td>
<td>2ND [d/c]</td>
<td></td>
<td>13.8.</td>
</tr>
<tr>
<td>Convert to decimal number.</td>
<td>2ND [Fr=D]</td>
<td></td>
<td>1.625.</td>
</tr>
<tr>
<td>Return to fraction.</td>
<td>2ND [Fr=D]</td>
<td></td>
<td>1.5 $\pm$ 8.</td>
</tr>
<tr>
<td><strong>Universal Powers and Roots</strong></td>
<td>Calculate $2^{1.1} - 5^{-2}$.</td>
<td>2 [Yx] 1.1 [=]</td>
<td>2.1035469255.</td>
</tr>
<tr>
<td></td>
<td>Calculate $\sqrt[5]{16} + \sqrt[3]{8}$.</td>
<td>16 2ND [√y] 2.5 [+ 0.6 2ND [√y] 3 [+] =</td>
<td>4.217064235.</td>
</tr>
<tr>
<td><strong>Delta Percent</strong></td>
<td>Find the percent change for a new value of 115 when the old value is 100.</td>
<td>115 2ND [Δ%] 100 =</td>
<td>15.</td>
</tr>
<tr>
<td><strong>Conversions</strong></td>
<td>Convert 10 Km to miles.</td>
<td>10 [mi-km]</td>
<td>6.213711922.</td>
</tr>
<tr>
<td></td>
<td>Convert 77°F to °K.</td>
<td>77 [°F-°C]</td>
<td>25.</td>
</tr>
<tr>
<td></td>
<td>Convert [°C-°F]</td>
<td>[°C-°F]</td>
<td>298.</td>
</tr>
<tr>
<td><strong>Trigonometry</strong></td>
<td>Calculate $\sin 30^\circ$.</td>
<td>30 [SIN]</td>
<td>0.5.</td>
</tr>
<tr>
<td>(Select DEG, RAD, or GRAD by pressing [DRG]. To convert angles, press 2ND [DRG=].)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calculate $\cos -1.5$ as an angle in degrees.</td>
<td>.5 2ND [COS-1]</td>
<td>60.</td>
</tr>
<tr>
<td></td>
<td>Convert $(8, -6)$ to polar form in degrees.</td>
<td>8 [a+b] [+] = 2ND [R→P]</td>
<td>(r) 10.</td>
</tr>
<tr>
<td></td>
<td>Convert $(9, 83^\circ)$ to rectangular form.</td>
<td>9 [a+b] 83 [P→R]</td>
<td>(x) 1.096824091.</td>
</tr>
<tr>
<td><strong>Complex Arithmetic</strong></td>
<td>Calculate $(3+5i) \times (4+6i) + 1+2i$.</td>
<td>MODE CPLX 3 [a+b] 5 [c] 4 [a+b] 6 [+] 1 [a+b] 2 [c] =</td>
<td>(real part) -17.</td>
</tr>
</tbody>
</table>

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(continued)