# R EXPRESSIONS

TEXT: R CRASH COURSE

| LAST NAME | FIRST NAME | DATE |
|---|---|---|
| | | |

**1** (6 points)**.** Round or truncate each number to 4 significant digits.

(a) 3.1415926

(b) 0.0045678

(c) 421.767

(d) 10.2031

(e) 41386377

(f) 0.000001040803

**2** (4 points)**.** For each row in the following table, fill out the other two representations of the same number. You are invited to do this by hand, but then you should check your answers using the technology. Do not round or truncate.

| | **Decimal** | **Engineering** | **Scientific** |
|---|---|---|---|
| example: | `0.618` | `6.18e-01` | $6.18 \times 10^{-1}$ |
| | `2600000` | | |
| | | `9.103e-05` | |
| | | | $1.917 \times 10^{4}$ |
| | | `5.606e+07` | |

**3** (8 points)**.** In each of the following questions, use R to compute the value of the expression. Avoid rounding during computation as much as possible by entering each formula as a single line. There is no need to round answers, but if you do, avoid relative errors in excess of 0.1%. Use the following values for the variables:

$\sigma = 2.4$
$s = 2.2$
$x = 15$
$\mu = 15.6$
$n = 12$
$p = 0.35$
$z = 1.645$

(a) $\frac{1}{2}x - \frac{3}{4}np$

(b) $\frac{x-\mu}{\sigma}$

(c) $\sqrt{np(1-p)}$

(d) $6 - 10\sqrt{\frac{p(1-p)}{n}}$

(e) $x + 1.28\frac{s}{\sqrt{n}}$

(f) $\frac{15-\mu}{s/\sqrt{n}}$

(g) $\frac{15-\mu}{s} \cdot \sqrt{n}$

(h) $\frac{x-\mu}{\sqrt{\frac{s^2}{n} + \frac{1}{2}}}$