

4. [26 pts - items vary] Convert and round as indicated; if not possible, say so.

(a) $5.2\overline{34}$ to a fraction

$\xrightarrow{\times 100}$ $523.\overline{4} = 523\frac{4}{9}$
 $= \frac{4711}{9}$
 $\xleftarrow{\div 100}$

$\frac{4711}{900}$

(-2) 1,000 adjusted
 (-5) no 9's applied
 (8)

(b) $3.412441244412\dots$ to a fraction

not possible

(c) $47.474474447\dots$ to a percent - round to the nearest tenth of a percent

$4,747.4\%$

(-3) 0.5%
 (-4) 47% wk.
 (4)

(d) 309.00206 to expanded form written with exponents (powers of ten)

$3 \cdot 10^2 + 9 \cdot 10^0 + 2 \cdot 10^{-3} + 6 \cdot 10^{-5}$

(-2) just + signs.
 (2) 300 x 10²
 (5) 0.02 x 10⁻³
 (5)

(e) "Seventeen million six thousand two and forty-nine ten-thousandths" to a fraction

$17,006,002.0049 = \frac{170060020049}{10,000}$

(-2) mixed #.
 (-1) last last 0.
 (-1) kept point.
 (5)

5. [6 pts] Which is the largest: $\frac{67}{990}$, $0.06\overline{76}$, or $0.0\overline{676}$? Show supporting work, but you need not explain.

$\frac{67}{990} = 0.067676767\dots$
 $0.0\overline{676} = 0.0676666\dots$
 $0.0\overline{676} = 0.0676676\dots$