

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

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

(b) $3.412441244412\dots$ to a fraction

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

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

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

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.

6. *[10 pts]* Explain how remainders help us to know that fractions can only create decimals that terminate or repeat.

7. *[6 pts]* Which is larger: $\frac{4}{3}$ of a number, or 130% of the number? Justify your response verbally or with a computation.

8. *[8 pts]* Use the definition of exponents (not any rules) to show why $(a^4)^2$ equals what it does.

9. *[10 pts]* Alden bought a plane ticket and paid \$207.71 altogether, which included a 12.8% surcharge for taxes and fees. What was the actual cost of the ticket without the surcharge? Show clear work, but you need not explain.

10. *[10 pts]* Kim bought an item marked with a 15% off sticker and got a surprise coupon for 30% off her entire purchase in a grab bag at the register. What is the overall percent of discount she will get on the item (round to the nearest tenth of a percent)? Show clear work, but you need not explain.