6.1.3 Compute the following quantities:

(e) $0.0006 - 0.002$

6.1.4 Compute the following quantities:

(d) $-0.0031 \cdot 10^6$

(f) $1.01 \cdot 3.03$

□

Problem 6.8: Suppose you are told that the number x rounds to 2.7 when rounded to the nearest tenth. What can you conclude about x?

6.2.2 Round −0.155 to

(c) the nearest hundredth.

6.2.4 Find a number x such that x rounded to the nearest tenth is 1.8, x rounded to the nearest hundredth is 1.82, and x rounded to the nearest thousandth is 1.819.

6.3.8★ On a calculator Julian divided x into y and got the answer 1.0625. Both x and y were positive integers less than 50, but he can't remember what they were. What is the sum of all possible values of x and y? *(Source: MATHCOUNTS)* **Hints:** 106

Problem 6.17: *Write the following as fractions in simplest form:*

(c) $0.2\overline{8}$

6.4.3 Find the smallest positive integer x so that the fraction $\frac{1}{10+x}$ has a finite decimal. (Source: *MATHCOUNTS*)

6.4.7 Express $\frac{.\overline{48}}{.\overline{15}}$ as a mixed number.

(26) Compute $\frac{(.2)^3}{(.02)^2}$. *(Source: AMC 8)*

6.34 What is the smallest positive integer k such that $\frac{k}{660}$ can be expressed as a terminating decimal?

6.36

(b)★ How many digits are in the decimal expansion of 2^{30}? **Hints:** 2

(c)★ How many digits are in the decimal expansion of 5^{30}? **Hints:** 161

6.37★ How many positive integers less than 100 have reciprocals with terminating decimal representations? *(Source: MATHCOUNTS)*

(c) Compute the infinite sum

$$\frac{1}{3}+\frac{1}{9}+\frac{1}{27}+\frac{1}{81}+\cdots,$$

where the denominators of the terms increase by a factor of 3. **Hints:** 75, 133