

MAT4010 Pretest Numbers

- 0.1. Are there more integers than natural numbers?
- 0.2. Are there more irrational than rational numbers?
- 0.3. Why do we use parentheses?
- 0.4. A student thinks it is weird that we round 0.5 to 1 and not to 0. Can you help?
- 0.5. Why is $(-1)(-1) = 1$?
- 0.6. Why can't you divide by 0?
- 0.7. Why is $10^0 = 1$?
- 0.8. Why is $10^{-1} = 1/10$?
- 0.9. What is 0^0 ?
- 0.10. Some students can't remember what is the numerator and what is the denominator. Can you help them?
- 0.11. Can you explain the rule for multiplying fractions?
- 0.12. Explain in simple terms why $1 : (1/2) = 2$.
- 0.13. Can you explain the rule for dividing by fractions? (Ours is not to reason why, just invert and multiply!)
- 0.14. A student says that

$$\frac{8}{15} : \frac{2}{3} = \frac{8 : 2}{15 : 3} = \frac{4}{5}.$$

Is this correct? If it is true, why do we not teach the students this rule?