tags: MATA02-2022

MATA02-2022: Quiz 1 - Practice [20pts total]

This is a practice quiz. The actual quiz will be During tutorials week 4: Jan 31-Feb 4. When writing this practice quiz, I wrote 5 versions of every problem, so that there will be 1 practice quiz and 5 real quizzes.

Question 1: Solve linear equation [6pts]

Solve for x from the following linear equation. You must show you work and put x in the simplest possible form.

$$\frac{2}{3}x + \frac{8}{5} = \frac{3}{2}x + \frac{7}{20}$$

Question 2: Rewrite exponents [6pts]

Assume that all variables represent positive real numbers only. Write the following as a product or quotient of powers in which each variable occurs only once, and all exponents are positive (but not necessarily an integer).

$$\left(\frac{x^4yy^{-4}z^{-2}}{8x^1y^0z^3} \right)^{-\frac{1}{3}}$$

Question 3: Use the Euclidean Algorithm [8pts]

Part 3.1

Find the greatest common divisor d of the following pair of numbers using the Euclidean Algorithm.

$$\gcd(670, 2104)$$

Part 3.2

Rewrite the greatest common divisor you found in part 3.1 as an integer sum of the original two numbers using the equations you found while performing the Euclidean algorithm.

That is, the final answer will look like:

$$\gcd(670, 2104) = 670 \cdot m + 2104 \cdot n$$

where m and n are the integers (could be positive, negative, or 0) you have to solve for.