Quiz

1. Express $\frac{4101}{12}$ as a mixed number.

2. Find the quotient $q(x)$ and remainder $r(x)$ for the following rational expression: $\frac{4x^3 + x^2 + x + 1}{x - 2}$

3. Find the quotient $q(x)$ and remainder $r(x)$ for the following rational expression: $\dfrac{2x^2}{1-x}$

4. Find the quotient $q(x)$ and remainder $r(x)$ for the following rational expression: $\dfrac{x^4-2x^3+1}{x^2}$

5. Find the quotient $q(x)$ and remainder $r(x)$ for the following rational expression: $\dfrac{x^3-1}{x^2-x-2}$

6. Find the quotient $q(x)$ and remainder $r(x)$ for the following rational expression: $\dfrac{(2x+3)(x-1)}{x^2-1}$

7. Simplify $\dfrac{x^3 - 27}{x - 3}$

8. Given $f(x) = \dfrac{x(x-2)(3x+1)}{(1+x)(2-x)\left(1-\frac{1}{x}\right)}$. Express $f(x)$ as a rational function then perform the long division to find the quotient and remainder.

Remember: The answers below are to help you check you work. The important thing is to be able to create and understand the complete solutions to these problems. Please re-read over the definitions/theorems/examples in the above notes as many times as necessary to gain a full understanding. Feel free to email your instructor or visit the MLC if you have questions. Typically on quizzes and exams the answer is worth very few points. The majority of the points are awarded on **the work** needed to get to the answer.

Answers

1. $341 + \frac{3}{4}$
2. $q(x) = 4x^2 + 9x + 19$, $r(x) = 39$
3. $q(x) = -2x - 2$, $r(x) = -2$
4. $q(x) = x^2 - 2x$, $r(x) = 1$
5. $q(x) = x + 1$, $r(x) = 3x + 1$
6. $q(x) = 2$, $r(x) = 1$
7. $x^2 + 3x + 9, x \neq 3$
8. $q(x) = -3x - 1$, $r(x) = -3x - 1$