

Math 1010 TNG

SLCC-Spring 2012

Polynomial Long Division

Part 1: Long Division – Calculators are not allowed

Use long division to simplify the following fractions:

(If you need help, check this example http://www.mathsisfun.com/long_division2.html and/or watch this video: <http://www.youtube.com/watch?v=3ULXhiJqIPs>)

1. $\frac{716}{5}$

2. $\frac{1213}{11}$

3. $\frac{4731}{225}$

How can you check your answers without a calculator?

Part 2: Polynomial Long Division

Steps:

The first three steps are similar to the process you used in part 1:

- the denominator goes first,
- then a ")",
- then the numerator with a line above

Similarly to the process you used in part 1, you need to Divide -Multiply – Subtract:

- Divide the first term of the numerator by the first term of the denominator, and put that in the answer.
- Multiply the denominator by that answer, put that below the numerator
- Subtract to create a new polynomial
- Repeat, using the new polynomial

Go to <http://www.mathsisfun.com/algebra/polynomials-division-long.html> to see a few examples and/or watch <http://mathvids.com/lesson/mathhelp/115-polynomial-long-division> .

Now, use polynomials long division to simplify the following rational expressions and check your answers:

4.
$$\frac{7x^3+16x^2+2x-1}{x+4}$$

$$5. \frac{3x^4 + 2x^3 - 8x + 6}{x^2 - 1}$$

$$6. \frac{27x^3 + 8}{3x + 2}$$

More videos about long division:

http://www.youtube.com/watch?v=l6_ghhd7kwQ

<http://www.youtube.com/watch?v=FTRDPB1wR5Y>