IB Pre HL Long Division and Synthetic Division by a linear (ax+b)

If  is divided by , then



Where  is the divisor,  is the quotient, and  is the remainder

Notes: 

1. 

a. Using Long Division b. Using Synthetic Division

2. 

a. Using Long Division b. Using Synthetic Division

3. 

a. Using Long Division b. Using Synthetic Division

4. 

a. Using Long Division b. Using Synthetic Division

When you divide a polynomial with a quadratic (), you cannot do "Synthetic Division" but only "Long Division".

5. 

6. 

Linear Factorization:

Consider the roots of the following and factorise.

1) 

2) 

3) 