BECA / Dr. Huson / Mathematics 5 June 2019 11.1 IB Math SL

## Homework: Polynomial long division

- 1. What is the quotient when  $x^2 3x 40$  is divided by x + 5?
- 2. What is the quotient when  $x^3 + 3x^2 x + 2$  is divided by x 1?
- 3. Determine whether the binomial x + 2 is a factor of  $f(x) = x^3 + x^2 16x 16$
- 4. Use long division to determine the quotient and remainder of  $(x^3+4x^2-8x-6)\div(x+2)$ .
- 5. The expression (x+a)(x+b) can not be written as
  - (a) a(x+b) + x(x+b)
  - (b)  $x^2 + (a+b)x + ab$
  - (c)  $x^2 + abx + ab$
  - (d) x(x+a) + b(x+a)
- 6. What is the equation of the line with slope 2 passing through the point (1,2)?
- 7. Given the function f(x) = (x-1)(x+3). State the x-intercepts of the graph of f. Find the coordinates of the vertex of the graph of f.
- 8. Given events A and B, such that P(A) = 0.6, P(B) = 0.5, and  $P(A \cup B) = 0.8$ , determine whether A and B are dependent or independent.