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 $P(A) = 0.6, \mathrm{P}(B) = 0.5$, and $\mathrm{P}(A \cup B) = 0.8$, determine whether A and B are dependent or independent.