Math AA HL Break Homework

[9 marks]

Let
$$f(x)=rac{2x^2-5x-12}{x+2},\,x\in\mathbb{R},\,x
eq -2.$$

- 1a. Find all the intercepts of the graph of f(x) with both the x and y axes. [4 marks]
- 1b. Write down the equation of the vertical asymptote.

[1 mark]

1c. As $x \to \pm \infty$ the graph of f(x) approaches an oblique straight line asymptote.

[4 marks]

Divide $2x^2 - 5x - 12$ by x + 2 to find the equation of this asymptote.

2. Use induction to prove that 6^n-1 is divisible by 5 for all $n\in\mathbb{N}.$

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