1) If $x + 2$ is a factor of $(x) = 2x^3 - 3x^2 - 4x + a$, find the value of a. (2 marks)

2) Let $f(x) = x^3 - x^2 - 14x + 24$

a) Use the factor theorem to show that $x + 4$ is a factor of $f(x)$ (2 marks)

b) Determine the other linear factors of $f(x)$ (3 marks)

3) Given that the remainder when $f(x) = x^3 - x^2 - ax + b$ is divided by $x + 1$ is 6, and that $x - 2$ is a factor, determine the values of a and b. (4 marks)

4) If $x^3 + ax + 6$ is divided by $x + 1$, the remainder is 12. Find the value of a.

(2 marks)