**Surds with Algebra**

(a) Given that find the values of and .

(b) Given that find the values of and .

(c) Given that , find the values of and .

(a) Find the nth term of the sequence

(b) Find the nth term of the sequence

(a) Show that is always a multiple of , given that and are integers.

(b) Show that is always even when and are integers.

(a) Given that is a prime number, rationalise the denominator of

(b) Rationalise the denominator of where is an integer and is a prime number.

Solve, giving your answer in its simplest form:

(a)

(b)

(c)

(d)

(e)

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