# Compute exactly or approximately and interpret pseudocode algorithms in varied mathematical settings

## Key skills | Free preview

Learning target: Compute exactly or approximately and interpret pseudocode algorithms in varied mathematical settings.

An iterative algorithm can combine exact arithmetic with progressively closer numerical approximations. Preserve rational values when checking the algebra, and round only when a requested accuracy is clear. A residual such as $x^2-2$ checks an approximation independently of the number of digits shown on a screen.

## Try the mathematics

Task 1. Start $x_0=1$ and repeat $x_{n+1}=(x_n+2/x_n)/2$ three times. Give exact fractions and decimals. State a safe rounding of the third result to three decimal places.

## Continue with the full worksheet

The complete resource has 2 focused task sets and substantive worked solutions. Use an exercise book or print the A4 worksheet. This preview shows the first task without its full solution.

Find this resource: https://resources.aspiretopowerlearning.com.au/vce/skills/sm-u1-o1-ks-14/

## Study-design reference

VCE Mathematics Study Design 2023-2027, version 1.1 (November 2022). Specialist Mathematics; Unit 1; Outcome 1; Key skills; bullet 14; p. 62.

The learning target is a concise paraphrase. Aspire reference: sm-u1-o1-ks-14. This is an internal identifier, not an official VCAA code.

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