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| **What will we be learning?**  **Number:** Calculating with percentages, Indices, Surds | **Why this? Why now?**  Students will develop their use of formal mathematical knowledge to interpret and solve problems, including in financial contexts.  Students can calculate with roots, and with integer and fractional indices.  Students can calculate and simplify surd expressions, for example √12 = √(4 x 3) = √4 x √3 = 2√3 and rationalise denominators. | **Key Words:**  Percent, percentage  Percentage change  Original amount  Multiplier  (Simple) interest  Integer, Fraction  Power  Indices  Square root, Cube root,  Surd,  Denominator  Rationalise |
| **What will we learn?**  • Solve problems involving percentage change, including:  o percentage increase / decrease problems  o original value problems  o simple interest, including in financial mathematics  • Use positive integer powers and associated real roots (square, cube and higher)  • Recognise powers of 2, 3, 4, 5  • Estimate powers and roots of any given positive number  • Calculate with roots, and with integer and fractional indices  • Calculate exactly with surds  • Simplify surd expressions involving squares (eg √12 =√(4×3) = √4×√3 = 2√3) and rationalise denominators  • Recognise and use simple geometric progressions (rⁿ where n is an integer and r is a surd) | |
| **What opportunities are there for wider study?**  **Dr Frost Maths** is the primary resource that we use for homestudies and it has lots of useful revision tools. Alongside this, you can search for a specific topic and you can either practise some questions online, or watch a video. Under the resources section, there is also a “Full Coverage” document for some topics that have a huge bank of exam questions on the topic in question.  <https://www.drfrostmaths.com/course.php?sid=-10>  **Corbett Maths** - video links, practice questions and textbook exercises with answers available. <https://corbettmaths.com/contents/>  **MathsGenie** - videos and exam questions along with worked solutions. <https://www.mathsgenie.co.uk/advance-information.html>  **Careers:** Financial industry, Actuary. | |
| **How will I be assessed?**  Half Term Assessment  Homestudy tasks  Quality of classwork | |