Foundation GCSE Topics and Hegarty Tasks

|  |  |  |  |
| --- | --- | --- | --- |
|  | Title | 61 content points  | Hegarty Maths Tasks |
| 1 | Factors and Multiples | 1. Written calculations: non calculator $+, -, ×, ÷$ | 21, 39, 50, 51 |
| 2. Negative numbers;  | 41, 42, 43 |
| 3. Prime factor decomposition;  | 29 |
| 4. HCF and LCM from Venn diagrams  | 32 |
| 5. Rounding and approximations | 130, 132 |
| 2 | Indices and Standard Form | 6. Indices: positive, negative, fractional, negative fractions, reciprocals  | 102-110 |
| 7. Standard form;  | 123-128 |
| 3 | Expressions 1 | 8. Simplifying expressions;  | 158-159 |
| 9. Expanding and factorise single brackets;  | 160-161 |
| 10. Expanding and factorise double brackets: incl. difference of two squares  | 223-224 |
| 4 | Equations 1 | 11. Form and solve linear equations;  | 184-187 |
| 12. Inequalities: number lines, solving linear, double sided | 169-171,266, 267 |
| 13. Change the subject: single and where subject occurs twice  | 280-286 |
| 5 | Charts and Averages | 14. Sampling: random, systematic and stratified  | 394-398 |
| 15. Bar and Pie charts | 425, 427-429 |
| 16. Scatter charts: lines of best fit, interpretations and extrapolations  | 453, 454 |
| 17. Averages from lists;  | 404-406, 409, 410  |
| 18. Average from tables;  | 414-418 |
| 19. Reverse means; | 407-408 |
| 6 | Area and Volume 1 | 20. Area: triangle, parallelogram, trapezium, circle, non-right-angled triangle | 556-9, 534-43, 517-9 |
| 21. Volume of prisms | 570-571 |
| 22. Surface area of prisms | 585 |
| 7 | Fractions, Decimals and Percentages 1 | 23. Fractions: add, subtract, multiply and divide  | 63, 66-69 |
| 24. Find fractions of an amount  | 77, 80 |
| 25. Find percentages of an amount  | 98, 89 |
| 26. Percentage change, compound interest and depreciation  | 91,92, 760 |
| 27. Reverse percentages  | 96 |
| 28. FDP conversions | 149, 75-6, 82-3. |

|  |  |  |  |
| --- | --- | --- | --- |
| 8 | Ratio | 29. Splitting into a ratio problems;  | 332-334 |
| 30. Speed, density, pressure;  | 716-737 |
| 9 | Shapes and Angles | 31. Properties of quadrilaterals;  | 824-826 |
| 32. Interior angles sums of polygons; using exterior angles to find sides | 560-565 |
| 33. Angles about a point, on a straight line and in a triangle;  | 477-8, 812-3 |
| 34. Angles on parallel lines (corresponding, alternate and vertically opposite)  | 480-483, 488-491 |
| 10 | Pythagoras | 35. Pythagoras’ Theorem to find sides;  | 497-507 |
| 11 | Trigonometry | 36. Trigonometry in right angled triangles to find angles; | 509-510 |
| 37. Trigonometry in right angled triangles to find sides;  | 511-512 |
| 12 | Sequences | 38. nth term of linear sequences;  | 198 |
| 39. Fibonacci sequences | 263 |
| 13 | Probability | 40. Combinations;  | 671-673 |
| 41. Sample space;  | 359 |
| 42. Venn diagrams and set notation  | 383-391 |
| 43. Tree diagrams: unconditional and conditional  | 362-367 |
| 14 | Transformations | 44. Translation;  | 637-638 |
| 45. Rotation;  | 648-649 |
| 46. Reflection;  | 639-641 |
| 47. Enlargement;  | 642-647 |
| 48. Plans and elevations | 837-844 |
| 15 | Equations 2 | 49. Solving quadratic equations by factorising;  | 230-233 |
| 16 | Area and Volume 2 | 50. Similarity: lengths, area, volume  | 615-621 |
| 51. Surface area | 587-591 |
| 17 | Graphs 1 | 52. Drawing straight lines;  | 206-213 |
| 53. Give the gradient and equation of a straight line;  | 201-213 |
| 18 | Constructions | 54. Constructions: triangles, perpendicular bisectors, angle bisectors  | 659-669 |
| 55. Loci;  | 674-679 |
| 19 | Equations 3 | 56. Plotting quadratic graphs;  | 251-260 |
| 57. Simultaneous linear equations;  | 190-195 |
| 58. Linear inequalities;  | 268 |
| 20 | Graphs 2 | 59. Recognising graphs: linear, quad., cubic, circle, exponential, reciprocal | 299-306 |
| 21 | Vectors  | 60. Column vectors | 623-627 |
| 61. Vectors around a shape | 628-631 |