| CAMBRIDGE<br>SM12 | Less<br>on | Exercise   | Questions  |
|-------------------|------------|--|--|
| Week 8            | 1          |  |  |
|                   | 2          |  |  |
|                   | 3          |  |  |
|                   | 4          | 7G- partial fractions 7H- further techniques and miscellaneous exercises                                 | 7G- 13abcd,14<br>7H-15, 16,18, 19, 21,22,<br>25,26, 28 |
| Week 9            | 1          | 8A- the fundamental<br>theorem of calculus<br>8B- area between<br>curves<br>8C- integration using<br>CAS |  |
|                   | 2          | 8D – Volumes of solids of revolution   |  |
|                   | 3          | 8E- lengths of curves in the plane   |  |
|                   | 4          | Sac revision   |  |
| Week 10           | 1          | Sac revision   |  |
|                   | 2          | Sac revision   |  |
|                   | 3          | SAC  |  |
|                   | 4          | SAC  |  |

| Week 11 | 1 | SAC   |  |
|---------|---|---|--|
|         | 2 | SAC   |  |
|         | 3 | SAC   |  |
|         | 4 | SAC   |  |
| Term 3  |   |   |  |
| Week 1  | 1 | 9A- An introduction to differential equation                                |  |
|         | 2 | 9B-differential equations involving a function of the independents variable |  |
|         | 3 | 9C- differential equations involving a function of the dependent variable   |  |
|         | 4 | 9D- applications of differential equations                                  |  |
| Week 2  | 1 | 9E- separation of variables   |  |
|         | 2 | 9F- differential<br>equations with related<br>rates                         |  |
|         | 3 | 9G- using a definite integral to solve a differential equation              |  |
|         | 4 | 9H-using Euler's<br>method to solve a<br>differential equation              |  |
| Week 3  | 1 | 9I- slope field for a differential equation                                 |  |

|        | 2 | 10A-position, velocity and acceleration                         |  |
|--------|---|---|--|
|        | 3 | 10B- constant<br>acceleration                                   |  |
|        | 4 | 10C- velocity- time<br>graph                                    |  |
| Week 4 | 1 | 10D- differential<br>equations of the form<br>v=f(x) and a=f(v) |  |
|        | 2 | 10E- other expressions for acceleration                         |  |
|        | 3 | 12A- vector functions   |  |
|        | 4 | 12B- position vectors as a function of time                     |  |
| Week 5 | 1 | 12C- vector calculus  |  |
|        | 2 | 12D- velocity and acceleration for motion along a curve         |  |
|        | 3 | 13A- force  |  |
|        | 4 | 13B- newton's laws of motion                                    |  |
| Week 6 | 1 | 13C- resolution of forces and inclined planes                   |  |
|        | 2 | 13D- connected particles  |  |
|        | 3 | 13E- variable forces  |  |
|        | 4 | 13F- equilibrium  |  |
| Week 7 | 1 | 13G- vector functions   |  |

|         | 2 | 15A- linear<br>combinations of random<br>variables                                 |  |
|---------|---|--|--|
|         | 3 | 15B- linear<br>combinations of<br>independent normal<br>random variables           |  |
|         | 4 | 15C- simulating the distribution of sample means                                   |  |
|         |   | 15D- the distribution of the sample mean of a normally distributed random variable |  |
| Week 8  | 1 | 15E- the central limit theorem   |  |
|         | 2 | 15F- confidence interval for the population mean                                   |  |
|         | 3 | 16A- hypothesis testing for the mean   |  |
|         | 4 | 16B- one-tail and two-tail tests   |  |
| Week 9  | 1 | 16C- two tail test revisited   |  |
|         | 2 | 16D- errors in hypothesis testing  |  |
|         | 3 |  |  |
|         | 4 |  |  |
| Week 10 | 1 |  |  |
|         | 2 |  |  |
|         | 3 |  |  |

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