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| **S3 National 5 Homework Exercise 8** | | | | | | | | | | | | | | | | | | | | | | | | C:\Users\Ian\Pictures\CHS.jpg | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | |
| **Surds & Indices** | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Issued by: | | |  | | | | | | | | | | | | | Return by: | | | | | |  | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **1.** | Simplify: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | a) |  | | b) | |  | | | | | c) |  | | | | | d) | | |  | | | | | e) |  | | | | | f) | | x | |
|  | g) |  | | | | | | | h) |  | | | | | | | | i) | |  | | | | | | | | j) | |  | | | | |
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|  | k) |  | | | | | | | l) |  | | | | | | | | m) | |  | | | | | | | | n) | |  | | | | |
|  |  |  | | | | | | |  |  | | | | | | | |  | |  | | | | | | | |  | |  | | | | |
| **2.** | Express with rational denominators (simplify where necessary): | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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|  | a) |  | | | b) | | |  | | | | | | c) |  | | | | | | d) | |  | | | | | | e) | | |  | | |
|  |  |  | | |  | | |  | | | | | |  |  | | | | | |  | |  | | | | | |  | | |  | | |
| **3.** | A rectangle has sides 10cm long and 8cm wide. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Find the length of its diagonal, giving your answer as a surd in its simplest form. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **4.** | Simplify the following expressions, leaving your answers with positive indices. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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|  | a) |  | | | | | | | b) |  | | | | | | | | c) | |  | | | | | | | | d) | |  | | | | |
|  |  |  | | | | | | |  |  | | | | | | | |  | |  | | | | | | | |  | |  | | | | |
|  | e) |  | | | | | | | f) |  | | | | | | | | g) | | 3k3(2k – 5k – 4) | | | | | | | | h) | |  | | | | |
|  |  |  | | | | | | |  |  | | | | | | | |  | |  | | | | | | | |  | |  | | | | |
| **5.** | a) | Express with positive indices: | | | | | | | | | | | | | | | b) | | Express without root signs: | | | | | | | | | | | | | | | |
|  | (i) | x - 3 | | (ii) | | | 6z - 2 | | | | (iii) | | h - 6 | | | | (i) | |  | | | | | | (ii) | |  | | | | (iii) | | |  |
|  |  |  | |  | | |  | | | |  | |  | | | |  | |  | | | | | |  | |  | | | |  | | |  |
| **6.** | Write as roots and evaluate: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  |  | | | | | | |  |  | | | | | | | |  | |  | | | | | | | |  | |  | | | | |
|  | a) |  | | | | | | | b) |  | | | | | | | | c) | |  | | | | | | | | d) | |  | | | | |