Name:

Year 10 Indices Test

Express all answers with positive indices.

Question 1 Simplify

(a) $h^2 \times h^3$



Question 2 Evaluate

(a)
$$2^3 \times 5^3$$

(b)
$$(32)^{0.2}$$

(c) 3×5^{-2}



Question 3 Simplify





The above shows how a fractal is constructed in stages from left to right. Each stage is constructed from the previous stage by splitting each remaining square into 9 equal squares and removing 4 of them. Stage 0 (the leftmost image) is a 1×1 square, so it has total area of 1 unit².

(a) Explain why stage 1 has a total area of $\frac{5}{9}$ unit².

(b) Explain why stage 2 has a total area of $\frac{25}{81}$ unit².

Question 5 continued...



(e) Hence, or otherwise, write an expression using indices to represent the area of Stage n.

