BOARD OF STUDIES
NEW SOUTH WALES

Question 5

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a) $y = 2\sqrt{25 - x^2}$

$= 2\sqrt{(5 - x)(5 + x)}$

b) (i) $\log_{10}(2^{1000}) = 33.11329952$ (calc)

$= 33.113$ (3dp)

(ii) 33 digit number.

c)

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d)

(i) $\int f(x) \doteq \frac{b-a}{2n}\{(y_0 + y_n) + 2(y_1 + y_2 + y_3)\}$

$\doteq \frac{4}{2}\{1 \cdot 3 + 1 \cdot 7\}$

$\doteq 2\{3\}$

$\doteq 6 \text{ m}^{82}$

(ii)

$0 \cdot 5 \frac{m}{s}$

$0 \cdot 5 \times 3600 = 1800 \times$

$6 \times 1800 = 10800$

$\therefore$ flows past 10,800 times in an hour.