

QUESTION 5

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

domain $-5 \leq x \leq 5$

range $0 \leq y$

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

$= 1000 \log_{10} 2$

$= 301.030$ (3 dec. pl)

ii) $2^{10} = 1024$

$2^{1000} =$

12 digits

c) $8 = 30^\circ r$ $30^\circ = \frac{\pi \times 30}{180}$

~~$r = \frac{8 \times 180}{\pi \times 30}$~~

$= 0.523598775 \dots$

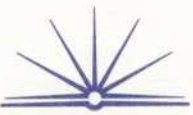
$8 = 0.5236 \times r$

$8 = r$

$0.5236 \dots$

~~$r = \frac{8}{0.5236}$
 $r = 15.28$
 $r = 15$ (nearest cm)~~

$15 \text{ cm (nearest cm)} = r$



d) i)

x	1	2	3
$f(x)$	4	4	4

$$\int_0^{12} f(x) dx \approx \frac{h}{2} (4 + 2(4) + 4)$$

$$\approx 3 (4 + 2(4) + 4)$$

$$\approx 48$$