ERRATA

Title : Strategic STPM Pre-U Text Mathematics Semester 2
Book Code : AAEVMM2675031A2
Author : Tan Guan Hin, Lee Yoon Woh, Lim Wen Li, Soon Pai Ee

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Example 20</td>
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Example 20
The function f is defined by:

$$f(x) = \begin{cases} \frac{x^2-36}{|x-6|}, & x \neq 6 \\ 0, & x = 6 \end{cases}$$

(a) Determine whether f is continuous at $x = 6$.
(b) Sketch the graph of f.

Solution:
(a)

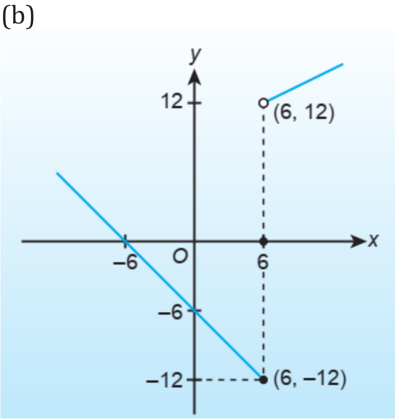
$$\mathrm{f}(x) = \begin{cases} \frac{(x-6)(x+6)}{(x-6)} = x+6, & x > 6 \\ \frac{-(x-6)(x+6)}{(x-6)} = -(x+6), & x < 6 \end{cases}$$

$$\lim_{x\to 6^-} \mathrm{f}(x) = \lim_{x\to 6^-} -(x+6) = -(6+6) = -12$$

$$\lim_{x\to 6^+} \mathrm{f}(x) = \lim_{x\to 6^+} (x+6) = 6+6 = 12$$

Since $\lim_{x\to 6^-} \mathrm{f}(x) \neq \lim_{x\to 6^+} \mathrm{f}(x)$ and $\lim_{x\to 5} \mathrm{f}(x)$ does not exist. Therefore, f is not continuous at $x = 6$.

(b)



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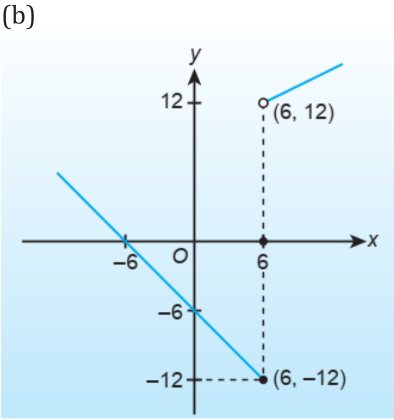

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no. 2</td>
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2. Sketch, on the same coordinate axes, the curve $y = x^3$ and the line $y = x$.
Calculate the area of the region enclosed by the curve $y = x^3$ and the line $y = x$.

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2. Sketch, on the same coordinate axes, the curve $y = x^3$ and the line $y = x$ for $x \geq 0$.
Calculate the area of the region enclosed by the curves for $0 \leq x \leq 1$.

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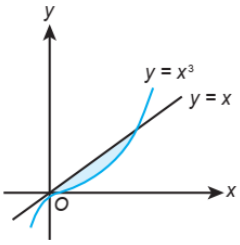
</table>

pg 157 no. 6	**6.** Given that $y = \cos^{-\frac{1}{2}} x$, show that $\frac{d^2y}{dx^2} = -\frac{1}{4}\left(y + \frac{1}{y^3}\right)$. By further differentiation, obtain the series expansion of in ascending powers of x up to the term in x^4.	**6.** Given that $y = \cos^{\frac{1}{2}} x$, show that $\frac{d^2y}{dx^2} = -\frac{1}{4}\left(y + \frac{1}{y^3}\right)$. By further differentiation, obtain the series expansion of $\cos^{\frac{1}{2}} x$ in ascending powers of x up to the term in x^4
pg 201 Exercise 9.5 no. 2	**2.** $\frac{1}{2}$ 	**2.** $\frac{1}{4}$