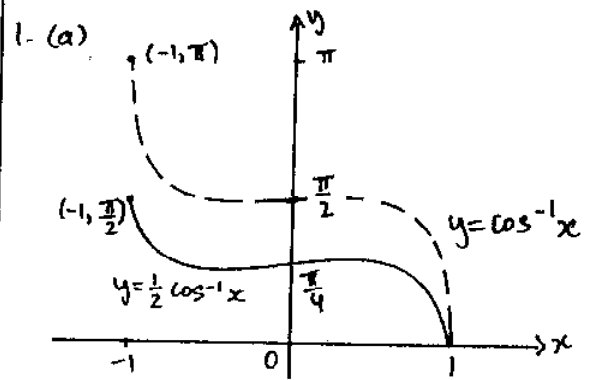
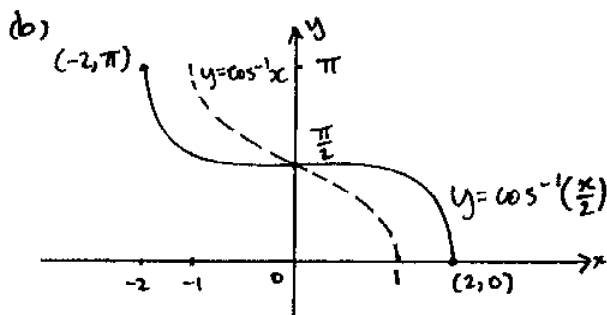


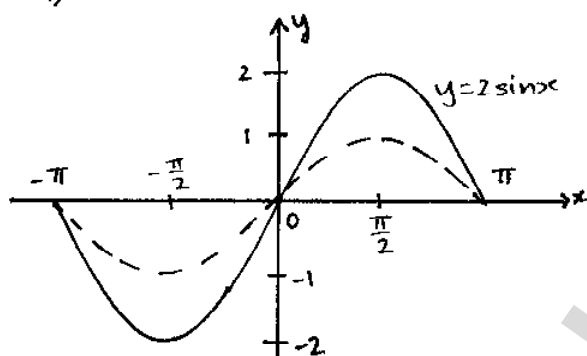
HSCFocus.com

EXERCISE: 1.4

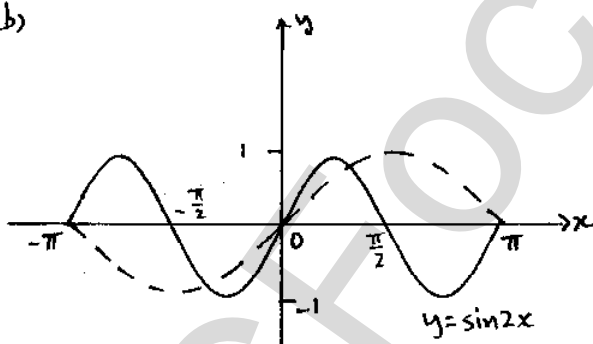




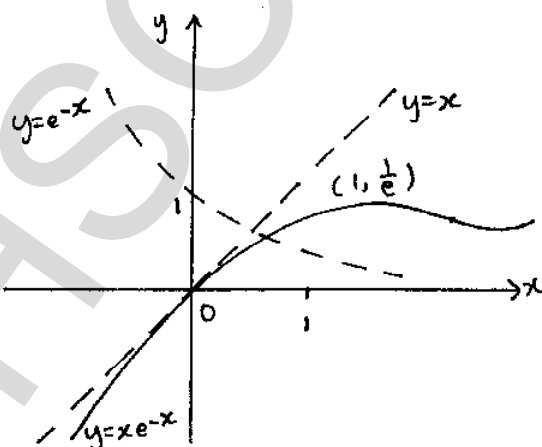
2. (a)



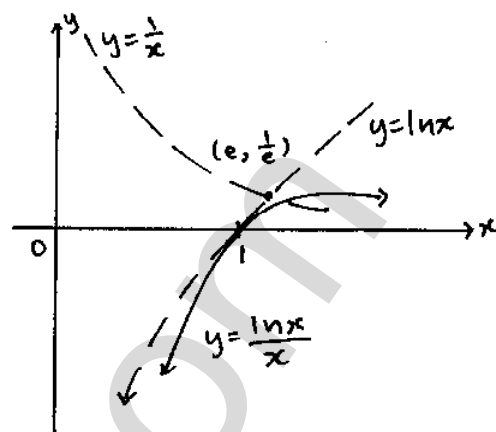
(b)



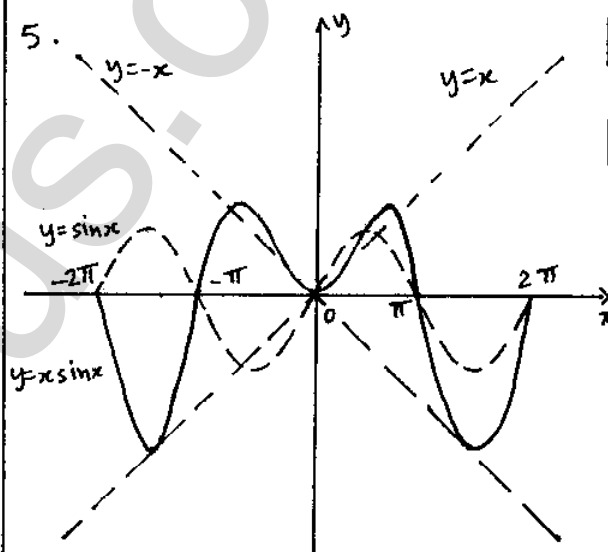
3.



4.



5.



Yes, it is an odd function since it is symmetrical about the origin $(0, 0)$. We can prove this also as

$$f(x) = x \sin x$$

$$\therefore f(-x) = -x \sin(-x) = x \sin x$$

$$\therefore f(-x) = f(x)$$

$\therefore f(x)$ is an even function.

6. As $f(x) = g(x) h(x)$

$$\therefore f(-x) = g(-x) h(-x)$$

$$\text{but } g(-x) = g(x) \text{ and } h(-x) = h(x)$$

[since both $g(x)$ and $h(x)$ are even]

$$\therefore f(-x) = g(x) h(x) \therefore f(-x) = f(x)$$

$\therefore f(x)$ is an even function.