

**F.TF.B.6: Domain and Range**

1 Which value of  $x$  is *not* in the domain of the function defined by  $y = \tan x$ ?

- 1)  $\pi$
- 2)  $\frac{\pi}{2}$
- 3)  $\frac{\pi}{3}$
- 4)  $\frac{2\pi}{3}$

2 In which interval of  $f(x) = \cos(x)$  is the inverse also a function?

- 1)  $-\frac{\pi}{2} < x < \frac{\pi}{2}$
- 2)  $-\frac{\pi}{2} \leq x \leq \frac{\pi}{2}$
- 3)  $0 \leq x \leq \pi$
- 4)  $\frac{\pi}{2} \leq x \leq \frac{3\pi}{2}$

3 Which statement regarding the inverse function is true?

- 1) A domain of  $y = \sin^{-1} x$  is  $[0, 2\pi]$ .
- 2) The range of  $y = \sin^{-1} x$  is  $[-1, 1]$ .
- 3) A domain of  $y = \cos^{-1} x$  is  $(-\infty, \infty)$ .
- 4) The range of  $y = \cos^{-1} x$  is  $[0, \pi]$ .

4 The function  $f(x) = \tan x$  is defined in such a way that  $f^{-1}(x)$  is a function. What can be the domain of  $f(x)$ ?

- 1)  $\{x \mid 0 \leq x \leq \pi\}$
- 2)  $\{x \mid 0 \leq x \leq 2\pi\}$
- 3)  $\left\{x \mid -\frac{\pi}{2} < x < \frac{\pi}{2}\right\}$
- 4)  $\left\{x \mid -\frac{\pi}{2} < x < \frac{3\pi}{2}\right\}$

5 When the inverse of  $\tan \theta$  is sketched, its domain is

- 1)  $-1 \leq \theta \leq 1$
- 2)  $-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}$
- 3)  $0 \leq \theta \leq \pi$
- 4)  $-\infty < \theta < \infty$

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**Answer Section**

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|---|--------|-----------------|
| 1 | ANS: 2 | REF: 018635siii |
| 2 | ANS: 3 | REF: 061224a2   |
| 3 | ANS: 4 | REF: 061427a2   |
| 4 | ANS: 3 | REF: 061022a2   |
| 5 | ANS: 4 | REF: 011622a2   |