

1.  $6x^2 + ax + 15 = (2x + b)(cx + 5)$  이고  $a, b, c$  는 상수일 때,  $a + b + c$  의 값은?

① 21

② 22

③ 23

④ 24

⑤ 25

해설

$$6x^2 + ax + 15 = 2cx^2 + (10 + bc)x + 5b$$

$$2c = 6, 5b = 15, 10 + bc = a$$

$$c = 3, b = 3, a = 19$$

$$\therefore a + b + c = 25$$

2.  $x - \frac{1}{x} = 1$  일 때,  $x^2 - \frac{1}{x^2}$  의 값은?

- ①  $\pm\sqrt{5}$       ②  $\pm 4$       ③  $\pm 1$       ④  $2$       ⑤  $-4$

해설

$$\begin{aligned}\left(x + \frac{1}{x}\right)^2 &= \left(x - \frac{1}{x}\right)^2 + 4 \\ &= 1 + 4 \\ &= 5\end{aligned}$$

$$x + \frac{1}{x} = \pm\sqrt{5}$$

$$\begin{aligned}x^2 - \frac{1}{x^2} &= \left(x - \frac{1}{x}\right)\left(x + \frac{1}{x}\right) \\ &= 1 \times (\pm\sqrt{5}) = \pm\sqrt{5}\end{aligned}$$