

14. Jika diketahui $y = 2^{3x^2+cx-1}$ dan $y = 4^{x^2-\frac{c}{2}}$ bersinggungan, maka $c^2 + c = \dots$
- (A) 2
 - (B) 6
 - (C) 12
 - (D) 20
 - (E) 30

Solusi: [B]

$$2^{3x^2+cx-1} = 4^{x^2-\frac{c}{2}}$$

$$2^{3x^2+cx-1} = 2^{2x^2-c}$$

$$3x^2 + cx - 1 = 2x^2 - c$$

$$x^2 + cx + c - 1 = 0$$

Syarat bersinggungan adalah $D = b^2 - 4ac = 0$, sehingga

$$c^2 - 4 \cdot 1 \cdot (c - 1) = 0$$

$$c^2 - 4c + 4 = 0$$

$$(c - 2)^2 = 0$$

$$c = 2$$

$$\therefore c^2 + c = 2^2 + 2 = 6$$