

$$\begin{aligned}
 15. \quad & 249^2 - 248^2 \\
 &= (249 - 248)(249 + 248) \\
 &= 1 \times 497 \\
 &= 497
 \end{aligned}$$

(D)

$$\begin{aligned}
 16. \quad & 4x^2 + 8x + 3 \\
 &= 4x^2 + 6x + 2x + 3 \\
 &= 2x(2x + 3) + 1(2x + 3) \\
 &= (2x + 3)(2x + 1)
 \end{aligned}$$

(B)

$$\begin{aligned}
 17. \quad & (x+y)^3 - (x^3 + y^3) \\
 &= \cancel{x^3} + \cancel{y^3} + 3xy(x+y) - \cancel{x^3} - \cancel{y^3}
 \end{aligned}$$

(D)  $3xy$ 

$$\begin{aligned}
 18. \quad & (x+3)^3 \\
 &= x^3 + 27 + 9x^2 + 27x
 \end{aligned}$$

(D) 27

$$19. \quad \frac{x}{y} + \frac{y}{x} = -1$$

$$\Rightarrow \frac{x^2 + y^2}{xy} = -1$$

$$\Rightarrow x^2 + y^2 = -xy$$

$$\Rightarrow x^2 + y^2 + xy = 0 \dots \textcircled{1}$$

$$x^3 - y^3 = (x-y)(x^2 + y^2 + xy)$$

$$= (x-y) \times 0 \text{ [using i]}$$

(C) = 0

$$\begin{aligned}
 20. \quad & 49x^2 - b = (7x + \frac{1}{2})(7x - \frac{1}{2}) \\
 &= (7x)^2 - (\frac{1}{2})^2
 \end{aligned}$$

$$\Rightarrow 49x^2 - b = 49x^2 - \frac{1}{4}$$

Comparing

const terms

$$-b = -\frac{1}{4}$$

$$\Rightarrow b = \frac{1}{4}$$

(C)

(21) if  $a+b+c=0$ (C)  $3abc$