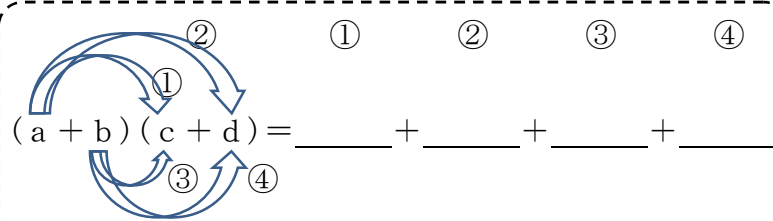


学習日 月 日

年 組 番 氏名

1 次の式を展開しなさい。



乗法公式1~4

1 $(x+a)(x+b) = \underline{\hspace{2cm}}$

2 $(x+a)^2 = \underline{\hspace{2cm}}$

3 $(x-a)^2 = \underline{\hspace{2cm}}$

4 $(x+a)(x-a) = \underline{\hspace{2cm}}$

2 次の計算をしなさい。 (p. 54)

(1) $\sqrt{2}(\sqrt{6}-3)$ 分配法則を使って
 $= \sqrt{2} \times \sqrt{\square} - \sqrt{2} \times \square$
 $= \sqrt{2} \times (\sqrt{\square} \times \sqrt{\square}) - \square \sqrt{2}$
 $= \sqrt{\square^2} \times \sqrt{\square} - \square \sqrt{2}$
 $= \square \sqrt{3} - \square \sqrt{2}$

(2) $(2\sqrt{5}+3)(\sqrt{5}+1)$
 $= 2\sqrt{5} \times \sqrt{\square} + 2\sqrt{5} \times \square + 3 \times \sqrt{\square} + 3 \times \square$
 $= 2\sqrt{\square^2} + 2\sqrt{5} \times \square + 3\sqrt{\square} + 3 \times \square$
 $= \square + 2\sqrt{5} + 3\sqrt{\square} + 3$
 $= \square + \square \sqrt{5}$

(3) $(\sqrt{3}-4)(\sqrt{3}+2)$ 乗法公式1を使って
 $= (\sqrt{3})^2 + (\square + \square)\sqrt{3} + (\square) \times \square$
 $= \square - \square \sqrt{3} - \square$
 $= \square - \square \sqrt{3}$

3 次の計算をしなさい。 (p. 54)

(1) $\sqrt{6}(2 + 2\sqrt{3})$

(2) $\sqrt{7}(2\sqrt{21} + \sqrt{14})$

(3) $3\sqrt{2}(\sqrt{18} - \sqrt{12})$

(4) $\sqrt{3}(-2\sqrt{6} + \sqrt{15})$

4 次の計算をしなさい。 (p. 54)

(1) $(3\sqrt{3}-5)(\sqrt{3}+2)$

(2) $(\sqrt{7}-\sqrt{5})^2$

(3) $(\sqrt{5}+\sqrt{3})(\sqrt{5}-\sqrt{3})$

(4) $(3\sqrt{7}+4)^2$

1

$$(a+b)(c+d) = \overset{\textcircled{1}}{a} \overset{\textcircled{2}}{c} + \overset{\textcircled{1}}{a} \overset{\textcircled{3}}{d} + \overset{\textcircled{4}}{b} \overset{\textcircled{2}}{c} + \overset{\textcircled{4}}{b} \overset{\textcircled{3}}{d}$$

乗法公式1~4

1 $(x+a)(x+b) = \underline{x^2 + (a+b)x + ab}$

2 $(x+a)^2 = \underline{x^2 + 2ax + a^2}$

3 $(x-a)^2 = \underline{x^2 - 2ax + a^2}$

4 $(x+a)(x-a) = \underline{x^2 - a^2}$

2

(1) $\sqrt{2}(\sqrt{6}-3)$
 $= \sqrt{2} \times \sqrt{\boxed{6}} - \sqrt{2} \times \boxed{3}$
 $= \sqrt{2} \times (\sqrt{\boxed{2}} \times \sqrt{\boxed{3}}) - \boxed{3}\sqrt{2}$
 $= \sqrt{\boxed{2}^2} \times \sqrt{\boxed{3}} - \boxed{3}\sqrt{2}$
 $= \boxed{2}\sqrt{3} - \boxed{3}\sqrt{2}$

(2) $(2\sqrt{5}+3)(\sqrt{5}+1)$
 $= 2\sqrt{5} \times \sqrt{\boxed{5}} + 2\sqrt{5} \times \boxed{1} + 3 \times \sqrt{\boxed{5}} + 3 \times \boxed{1}$
 $= 2 \times \sqrt{\boxed{5}^2} + 2\sqrt{5} \times \boxed{1} + 3 \times \sqrt{\boxed{5}} + 3 \times \boxed{1}$
 $= \boxed{10} + 2\sqrt{5} + 3\sqrt{\boxed{5}} + 3$
 $= \boxed{13} + \boxed{5}\sqrt{5}$

(3) $(\sqrt{3}-4)(\sqrt{3}+2)$ 乗法公式1を使って
 $= (\sqrt{\boxed{3}})^2 + (\boxed{-4} + \boxed{2})\sqrt{3} + (\boxed{-4}) \times \boxed{2}$
 $= \boxed{3} - \boxed{2}\sqrt{3} - \boxed{8}$
 $= \boxed{-5} - \boxed{2}\sqrt{3}$

3

(1) $\sqrt{6}(2+2\sqrt{3})$
 $= \sqrt{6} \times 2 + \sqrt{6} \times 2 \times \sqrt{3}$
 $= \sqrt{6} \times 2 + (\sqrt{2} \times \sqrt{3}) \times 2 \times \sqrt{3}$
 $= 2\sqrt{6} + 2 \times (\sqrt{3})^2 \times \sqrt{2}$
 $= 2\sqrt{6} + 6\sqrt{2}$

(2) $\sqrt{7}(2\sqrt{21}+\sqrt{14})$
 $= \sqrt{7} \times 2\sqrt{21} + \sqrt{7} \times \sqrt{14}$

$$= \sqrt{7} \times 2 \times (\sqrt{7} \times \sqrt{3}) + \sqrt{7} \times (\sqrt{7} \times \sqrt{2})$$

$$= 2 \times (\sqrt{7})^2 \times \sqrt{3} + (\sqrt{7})^2 \times \sqrt{2}$$

$$= 14\sqrt{3} + 7\sqrt{2}$$

(3) $3\sqrt{2}(\sqrt{18}-\sqrt{12})$
 $= 3\sqrt{2}(3\sqrt{2}-2\sqrt{3})$
 $= 3\sqrt{2} \times 3\sqrt{2} - 3\sqrt{2} \times 2\sqrt{3}$
 $= 3 \times 3 \times (\sqrt{2})^2 - 3 \times 2 \times \sqrt{2} \times \sqrt{3}$
 $= 18 - 6\sqrt{6}$

(4) $\sqrt{3}(-2\sqrt{6}+\sqrt{15})$
 $= \sqrt{3} \times (-2\sqrt{6}) + \sqrt{3} \times \sqrt{15}$
 $= \sqrt{3} \times (-2\sqrt{6}) + \sqrt{3} \times (\sqrt{3} \times \sqrt{5})$
 $= \sqrt{3} \times \{(-2) \times \sqrt{3} \times \sqrt{2}\} + \sqrt{3} \times (\sqrt{3} \times \sqrt{5})$
 $= -2 \times (\sqrt{3})^2 \times \sqrt{2} + (\sqrt{3})^2 \times \sqrt{5}$
 $= -6\sqrt{2} + 3\sqrt{5}$

4

(1) $(3\sqrt{3}-5)(\sqrt{3}+2)$
 $= 3\sqrt{3} \times \sqrt{3} + 3\sqrt{3} \times 2 - 5 \times \sqrt{3} - 5 \times 2$
 $= 3 \times (\sqrt{3})^2 + 3\sqrt{3} \times 2 - 5 \times \sqrt{3} - 5 \times 2$
 $= 9 + 6\sqrt{3} - 5\sqrt{3} - 10$
 $= -1 + \sqrt{3}$

(2) $(\sqrt{7}-\sqrt{5})^2$
 $= (\sqrt{7})^2 - 2 \times \sqrt{5} \times \sqrt{7} + (\sqrt{5})^2$
 $= 7 - 2\sqrt{35} + 5$
 $= 12 - 2\sqrt{35}$

(3) $(\sqrt{5}+\sqrt{3})(\sqrt{5}-\sqrt{3})$
 $= (\sqrt{5})^2 - (\sqrt{3})^2$
 $= 5 - 3$
 $= 2$

(4) $(3\sqrt{7}+4)^2$
 $= (3\sqrt{7})^2 + 2 \times 4 \times 3\sqrt{7} + 4^2$
 $= 9 \times 7 + 24\sqrt{7} + 16$
 $= 63 + 24\sqrt{7} + 16$
 $= 79 + 24\sqrt{7}$