

対策④

問1 (5) $(\sqrt{3}+4)^2 - (\sqrt{2}+1)(\sqrt{2}-1)$

$$\begin{aligned} &= 3+8\sqrt{3}+16 - (2-1) \\ &= 19+8\sqrt{3}-1 \\ &= \underline{18+8\sqrt{3}} \end{aligned}$$

(5) $(a-b+0.6)(-a-b-0.6)$

$$\begin{aligned} &= (-b+a+0.6)\{-b-(a+0.6)\} \\ &= (-b+A)(-b-A) \\ &= (b)^2 - A^2 \\ &= b^2 - (a+0.6)^2 \\ &= b^2 - (a^2+1.2a+0.36) \\ &= \underline{b^2 - a^2 - 1.2a - 0.36} \end{aligned}$$

(5) $x^2-y^2-4x+4 = 3=314A)$

$$\begin{aligned} &= x^2-4x+4-y^2 \quad 3.12 \text{ 等 } \lambda \text{ 3} \\ &= (x-2)^2 - y^2 \\ &= A^2 - y^2 \\ &= (A+y)(A-y) \\ &= \underline{(x-2+y)(x-2-y)} \end{aligned}$$

問4 (4) ③ 全2の母を81132.

$\frac{\sqrt{5}}{\sqrt{8}}$	$\frac{\sqrt{5}}{8}$	$\frac{5}{\sqrt{8}}$	$\frac{5}{8}$
$\frac{\sqrt{40}}{8}$	$\frac{\sqrt{5}}{8}$	$\frac{5\sqrt{8}}{8}$	$\frac{125}{8}$
$\frac{\sqrt{40}}{8}$	$\frac{\sqrt{5}}{8}$	$\frac{\sqrt{200}}{8}$	$\frac{125}{8}$

② ④ ① ③

問2 (4) $\frac{(x+y+3)(x+y-3)}{A}$

$$\begin{aligned} &= (A+3)(A-3) \\ &= A^2 - 9 \\ &= (x+y)^2 - 9 \\ &= \underline{x^2+2xy+y^2-9} \end{aligned}$$

問3 (3) $4x^2y-16y$

$$\begin{aligned} &= 4y(x^2-4) \quad \leftarrow \text{共通因数} \\ &= 4y(x+2)(x-2) \end{aligned}$$

(4) $\frac{(a-3)^2-10(a-3)+25}{A}$

$$\begin{aligned} &= A^2 - 10A + 25 \\ &= (A-5)^2 \\ &= (a-3-5)^2 \\ &= \underline{(a-8)^2} \end{aligned}$$

問4 (4) $\frac{\sqrt{5}}{8} \quad \frac{\sqrt{5}}{8} \quad \frac{5}{\sqrt{8}} \quad \frac{\sqrt{25}}{64}$

$\frac{5}{8}$	$\frac{5}{64}$	$\frac{25}{8}$	$\frac{25}{64}$
②	④	①	③

通分

$$\frac{15}{8} < \frac{25}{64} < \frac{5}{8} < \frac{5}{\sqrt{8}}$$

(5) ③ $\frac{\sqrt{6}(\sqrt{5}+\sqrt{3})}{(\sqrt{5}-\sqrt{3})(\sqrt{5}+3)}$

$$\begin{aligned} &= \frac{\sqrt{30}+\sqrt{18}}{5-3} \\ &= \frac{\sqrt{30}+3\sqrt{2}}{2} \end{aligned}$$

④ $(a-b)(a-b) = a^2 - b^2$
E A 113

(6) $\sqrt{5} = 2.236 \quad \sqrt{30} = 7.071$

① $\sqrt{500}$
 $= \sqrt{5} \times \sqrt{100}$
 $= 2.236 \times 10$
 $= \underline{22.36}$

② $\frac{1}{\sqrt{2}}$
 $= \sqrt{\frac{1}{2}}$
 $= \sqrt{0.50}$
 $= \sqrt{\frac{30}{100}}$
 $= \sqrt{30} \times \sqrt{\frac{1}{100}}$
 $= 7.071 \times 0.1 = \underline{0.7071}$

問5 (1) $\sqrt{32} - \sqrt{50} \div \sqrt{2} + \sqrt{18}$

$$\begin{aligned} &= 4\sqrt{2} - \sqrt{25} + 3\sqrt{2} \\ &= \underline{7\sqrt{2} - 5} \end{aligned}$$

(4) $2\sqrt{7} - \frac{6\sqrt{3}}{\sqrt{3} \times \sqrt{3}}$
 $= 6\sqrt{3} - \frac{2\sqrt{3}}{3}$
 $= \underline{4\sqrt{3}}$

問7 (1) $5 < \sqrt{n} < 7$
 $25 < n < 49$

$n = 26 \sim 48$

個数: $48-26+1 = \underline{23}$

(2) $\sqrt{8} < \frac{n+5}{A+3} < \sqrt{13}$
 $8 < A^2 < 75$

20
平方根
 $A^2 = 9, 16, 25, 36, 49, 64$
 $A = 3, 4, 5, 6, 7, 8$
 $n+5 = 3, 4, 5, 6, 7, 8$
 $n = -2, -1, 0, 1, 2, 3$
 n 自然数 $n = 1, 2, 3$
37

(3) $\sqrt{90n}$

$90 = 2^1 \times 3^2 \times 5^1$
 $\downarrow \times 2 \quad \downarrow \times 5$
 $2^2 \quad 5^2$
 $n = \underline{10}$

(4) $\sqrt{49-3n}$ 整数 (0を含む)

49-3n = 24	49-3n = 36	49-3n = 49	49-3n = 64
n = 8	n = 16	n = 13	n = 16

49-3n = 36
49-36 = 3n
3n = 13
49-3n = 49

n = 11

問7 (1) $\sqrt{\frac{500}{n}}$

$500 = 2^2 \times 5^3$ 2を2回分ける。
 $= 2^2 \times 5^2 \times 5$

$\sqrt{\frac{2^2 \times 5^2 \times 5}{n}}$
 $n=5$
 $n_2 = 5 \times 2^2 = 20$
 $n_3 = 5 \times 5^2 = 125$
 $n_4 = 5 \times 2^2 \times 5^2 = 200$

$n = 125_4$

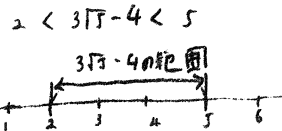
(6) 4×74131

$3\sqrt{5} - 4$

$4 < 5 < 9$

$2 < \sqrt{5} < 3$ 2×2

$6 < 3\sqrt{5} < 9$ 2×4



$3\sqrt{5} - 4$ の整数部分が分かたない!

(5) $3\sqrt{5} - 4$

$3\sqrt{5} = \sqrt{45}$

$36 < 45 < 49$

$6 < \sqrt{45} < 7$ 2×4

$2 < 3\sqrt{5} - 4 < 3$



① $\sqrt{a}$ の整数部分を求める時は
 $\sqrt{a}$ の形にする

$a(2 - 3\sqrt{5})$

$a = 2$

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

$= 3\sqrt{5} - 6 = -12$

問8 Y

		$y-1$	y	$y+1$
$x-1$	...	$(x-1)(y-1)$	$(x-1)y$	$(x-1)(y+1)$
x	...	$x(y-1)$	xy	$x(y+1)$
$x+1$	...	$(x+1)(y-1)$	$(x+1)y$	$(x+1)(y+1)$

上2つ + 下2つ $= (x-1) \times 2y + (x+1) \times 2y$
 $= 2y \times (x-1 + x+1)$
 $= 2y \times 2x = 4xy_4$

(3) 左上の数 X と Y にける (4)

$X = x-1$
 $Y = y-1$
 $\begin{cases} x = X+1 \\ y = Y+1 \end{cases}$

$4xy = 4(x+1)(y+1)$

$4(2+1)(4+1)$

$(x-1)(y-1)$		$(x-1)(y+1)$
	xy	
$(x+1)(y-1)$		$(x+1)(y+1)$

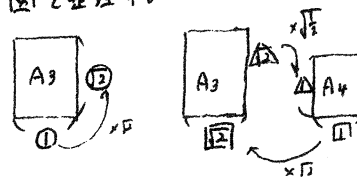
四つの合計を(2)と同様に求める
 結果同じ $42y$ 中央の数 x がわか

$4x = 112$

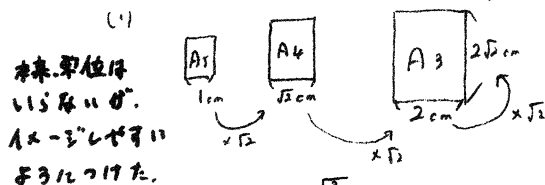
$x = 28$

中央の数: 28_4

問9 図で整理する

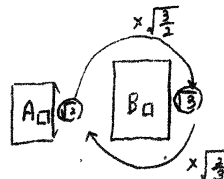


A_4 を A_3 に変えるには $\times \sqrt{2}$
 A_3 を A_4 に変えるには $\div \sqrt{2}$



A_3 の長さ $2\sqrt{2}$
 2×1.414
 $= 2.828$

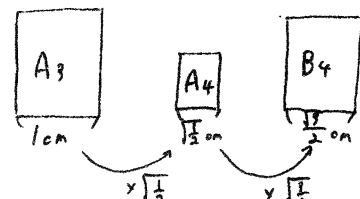
(1)



A_1 を B_1 に変えるには $\times \sqrt{2}$
 B_1 を A_1 に変えるには $\div \sqrt{2}$

拡大・縮小の倍率は辺の長さによって決まる。

① A_3 の短辺を何倍したか B_4 の短辺に合わせる (長辺)



1 cm が $\frac{\sqrt{3}}{2} \text{ cm}$ になる $\rightarrow \frac{\sqrt{3}}{2}$ 倍
 $\sqrt{3} \div 2 = 1.732 \div 2 = 0.866$
 $0.866 \times 100 = 86.6\%$
 ② 86%