2017年 29年 I+A 追試

第1問 [1]

$$k = \frac{6}{\sqrt{3}+1} = \frac{\overset{3}{\cancel{6}}(\sqrt{3}-1)}{\cancel{(\sqrt{3}+1)(\sqrt{3}-1)}}$$
$$= 3\sqrt{3}-3$$

$$\begin{array}{r} 1.73 \\ \times\ 3 \\ \hline 5.19 \end{array} \quad -3 = 2.19$$

I … 2

$$6 \geqq |(\sqrt{3}+1)x - 12|$$

$$-6 \leqq (\sqrt{3}+1)x - 12 \leqq 6$$
$$6 \leqq (\sqrt{3}+1)x \leqq 18$$
$$\frac{6}{\sqrt{3}+1} \leqq x \leqq \frac{18}{\sqrt{3}+1}$$
$$3\sqrt{3}-3 \leqq x \leqq 9\sqrt{3}-9$$

$x = 3, 4, 5, 6$ の4コ

$$\begin{array}{r} 1.73 \\ \times\ 9 \\ \hline 15.57 \\ -\ 9 \\ \hline 6.57 \end{array}$$

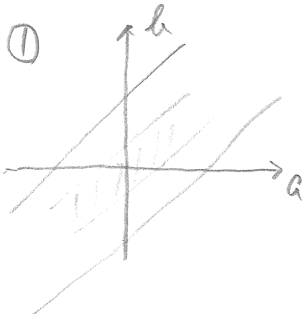
[2]

$a=\sqrt{3}$ で $b^2=4$ $b=\pm 2$
Aは偽

$a=2$ で $b^2=5$ $b=\pm\sqrt{5}$
Bは偽 ③

⓪ $a=0$, $b=1$ で NG

①



OK

② 逆は ⇒ 前後を入れ替えただけ

③ 否定でき，かつ ← または が できている

OK

① と ③

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第1問 [3]

$g(x) = (a+1)x^2 + ax - 1$

$a = -1$で 直線

$a = -1$で
$f(x) = 3x^2 + 2x - 1$

$3x^2 + 2x - 1$

3	-1	-1
1	1	3
3	-1	2

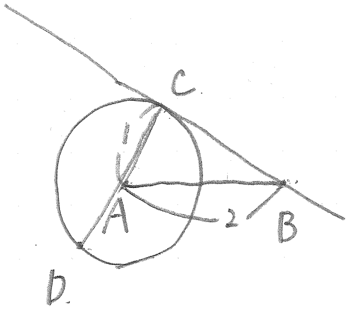
$(3x-1)(x+1) = 0$

$x = \frac{1}{3}, -1$

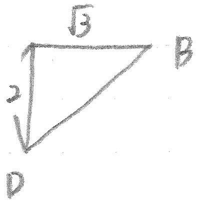
$f(x) + g(x) = 0$
$(1-2a)x^2 + 2x - a - 2 + (a+1)x^2 + ax - 1$
$(2-a)x^2 + (a+2)x - a - 3 = 0$

判別式 $D = (a+2)^2 - 4(2-a)(-a-3)$
$= a^2 + 4a + 4 - 4(a+3)(a-2)$
$= a^2 + 4a + 4 - 4(a^2 + a - 6)$
$= -3a^2 + 4 + 24$
$3a^2 = 28$
$a^2 = \frac{28}{3}$
$a = \frac{2\sqrt{7}}{\sqrt{3}} = \pm\frac{2}{3}\sqrt{21}$
$a = 2$

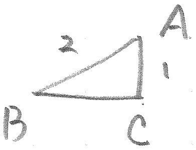
2017年　29年　I+A　追試
第2問　[1]



$CB^2 = 2^2 - 1^2 = 4 - 1$
$CB = \sqrt{3}$

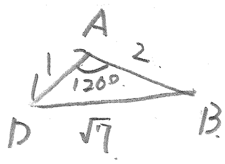


$BD^2 = \sqrt{3}^2 + 2^2 = 3+4=7$
$BD = \sqrt{7}$



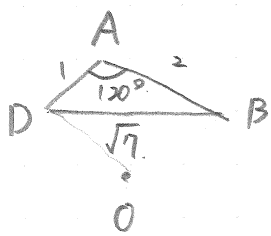
$\sin B = \frac{1}{2}$

ア…3.　イ…7.　ウ.エ…1.2.
オ.カ.キ…2.1.3
ク.ケ.コ… −.1.2
サ.シ…1.2.

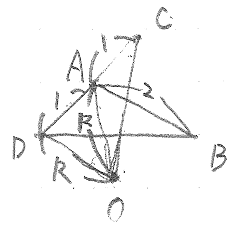


$\frac{\sqrt{7}}{\sin 120°} = 2R$

$R = \frac{\sqrt{7}}{2 \cdot \frac{\sqrt{3}}{2}} = \frac{\sqrt{21}}{3}$



$360 - 240 = 120°$
$\cos 120° = -\frac{1}{2}$



DA = AC より
$\triangle ODC \times \frac{1}{2} = \triangle AOC$

$\frac{1}{2} \cdot R \cdot OC \cdot \sin\angle COD \times \frac{1}{2} = \frac{1}{2} \cdot R \cdot OC \cdot \sin\angle AOC$

$\frac{1}{2} \sin\angle COD = \sin\angle AOC$

$\frac{\sin\angle AOC}{\sin\angle COD} = \frac{1}{2}$