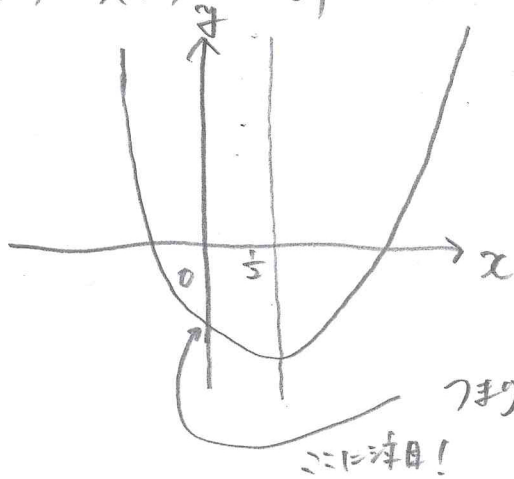


手紙

1/3

[I] (2) 負の整数解をもつときは下のグラフに一致する。



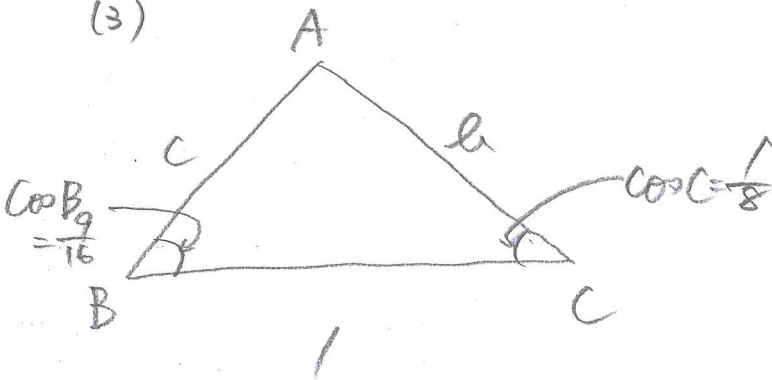
7行目. $x=0$ の時 $y < 0$

$\therefore a < 0$!

$$17 = \frac{1}{2} \cdot 2 - 2a < 0$$

$$a > 0$$

(3)



余弦定理より

$$\begin{cases} b^2 = c^2 + 1 - 2 \cdot c \cdot 1 \cdot \cos B \\ c^2 = b^2 + 1 - 2 \cdot b \cdot 1 \cdot \cos C \end{cases}$$

↓

$$\begin{cases} b^2 = c^2 + 1 - \frac{9}{8}c & \text{--- ①} \\ c^2 = b^2 + 1 - \frac{1}{4}c & \text{--- ②} \end{cases}$$

$$\text{①} - \text{②} \text{より } 0 = 2 - \frac{9}{8}c - \frac{1}{4}b$$

$$b = 8 - \frac{9}{2}c \text{ --- ③}$$

$$\textcircled{3} \text{ ① } 1 = \cos^2 C$$

$$(8 - \frac{9}{8}C)^2 = C^2 + 1 - \frac{9}{8}C$$

$$64 - 72C + \frac{81}{4}C^2 = C^2 + 1 - \frac{9}{8}C$$

$$512 - 576C + 162C^2 = 8C^2 + 8 - 9C$$

$$154C^2 - 567C + 504 = 0$$

$$22C^2 - 81C + 72 = 0$$

$$(2C - 3)(11C - 24) = 0$$

$$C = \frac{3}{2}, \frac{24}{11}$$

$$\textcircled{3} \text{ ② } 1 = \cos^2 C, \quad b = \frac{5}{4}, -\frac{20}{11}$$

$$b > 0, C > 0 \text{ ①} \quad (b, C) = \left(\frac{5}{4}, \frac{3}{2}\right)$$

(4)

$$\sin^2 C = 1 - \cos^2 C = 1 - \frac{1}{64} = \frac{63}{64}$$

$$\sin C > 0 \text{ ①} \quad \sin C = \frac{3\sqrt{7}}{8}$$

$$\textcircled{3} \text{ ②} \quad b = \frac{5}{4} \text{ ①} \quad S = \frac{1}{2} \cdot b \cdot 1 \cdot \sin C$$

$$= \frac{1}{2} \times \frac{5}{4} \times 1 \times \frac{3\sqrt{7}}{8}$$

$$= \frac{15}{64}\sqrt{7}$$

$\frac{2}{3}$