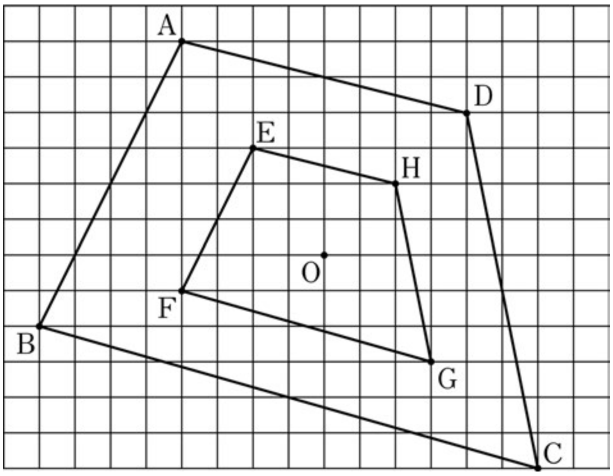
<table>
<tr><td rowspan="2">1</td><td>(1)</td><td>Since $\triangle$ABC is a right-angled triangle with $\angle BCA = 90°$, using the Pythagorean theorem, we have
$AB^2 = AC^2 + BC^2$
$= 6^2 + 4^2$
$= 36 + 16$
$= 52.$
Since $AB > 0$, $AB = 2\sqrt{13}$ cm.
(Answer) $2\sqrt{13}$ cm</td></tr>
<tr><td>(2)</td><td>(Answer) $\sqrt{26}$ cm</td></tr>
<tr><td>2</td><td>(3)</td><td></td></tr>
<tr><td>3</td><td>(4)</td><td>(Answer) 28</td></tr>
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(5) (Answer) 0.899

(6) Since $\triangle$ABC is a right-angled triangle with $\angle \mathrm{ABC} = 90°$, we have

$$\tan 36° = \frac{\mathrm{AB}}{\mathrm{BC}}.$$

Hence, we obtain

$$\begin{aligned}\mathrm{AB} &= \mathrm{BC}\tan 36° \\ &= 50 \times 0.7265 \\ &= 36.325 \\ &\approx 36.3(\mathrm{m}).\end{aligned}$$

(Answer) 36.3 m

5

(7) Let D be the discriminant of the quadratic equation

$$x^2 + (1-3a)x + a^2 - a + 1 = 0. \quad (*)$$

Since (*) has two distinct real roots, $D > 0$. Since

$$\begin{aligned}D &= (1-3a)^2 - 4 \cdot 1 \cdot (a^2 - a + 1) \\ &= (1 - 6a + 9a^2) + (-4a^2 + 4a - 4) \\ &= 5a^2 - 2a - 3,\end{aligned}$$

we have

$$5a^2 - 2a - 3 > 0$$

$$(a-1)(5a+3) > 0$$

$$a < -\frac{3}{5},\ 1 < a.$$

(Answer) $a < -\frac{3}{5},\ 1 < a$

6

(8) (Answer) $\frac{1}{400}$

(9) When a player has three chances successively, let A be the event “the player gets three items Cs”. Then, the event “the player gets at least one item A or B” is the complementary event of A, which is $\overline{A}$.
The probability of occurring event A, denoted by $P(A)$, is

$$P(A) = \left(\frac{3}{4}\right)^3 = \frac{27}{64}.$$

Therefore, the required probability $P(\overline{A})$ is

$$P(\overline{A}) = 1 - P(A) = 1 - \frac{27}{64} = \frac{37}{64}.$$

(Answer) $\frac{37}{64}$

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(10) (Answer) 5