

نام و نام خانوادگی: آری غفرانی سوادکوهی پاسخنامه تشریحی تکلیف شماره ۱۳۰ کلاس: دو نوبت B

تعیین سینوسها
 $\hat{A} \hat{B} \hat{C} = 170^\circ \rightarrow \hat{A} + \hat{B} = 10^\circ \rightarrow \hat{A} = 6^\circ$
 $\frac{\sin \hat{A}}{\sin \hat{B}} = \frac{\sin B}{\sin \hat{B}} \rightarrow \frac{\sin 6^\circ}{\frac{\sqrt{2}}{2}} = \frac{\sin B}{\frac{2\sqrt{2}}{2}} \rightarrow \sin B = \frac{\sqrt{2}}{2} \rightarrow B = 45^\circ$
 $C = 135^\circ$

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$\hat{A} + \hat{B} + \hat{C} = 180^\circ \rightarrow \hat{A} = 130^\circ$
 $\frac{\sin \hat{A}}{\sin \hat{B}} = \frac{\sin A}{\sin B} \rightarrow \frac{\sin 130^\circ}{\frac{\sqrt{2}}{2}} = \frac{\sin A}{\frac{2\sqrt{2}}{2}} \rightarrow \sin A = \frac{\sqrt{2}}{2} \rightarrow A = 45^\circ$
 $m = \frac{2}{3}$

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$(b^2 - r) \frac{\sin \theta}{\sin \hat{B}} = c \rightarrow \frac{b^2 - r}{\sin \hat{B}} = \frac{c}{\sin \theta}$ (تعیین سینوسها)
 $b^2 - r = b$ (r=b)

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$a^2 = b^2 + c^2 - 2bc \cos \hat{A} \rightarrow 13^2 = (2)^2 + (21)^2 - 2(2)(21) \cos \hat{B}$
 $-542 = -42 \cos \hat{B} \rightarrow \cos \hat{B} = \frac{1}{2} \rightarrow \sin^2 \hat{B} + \cos^2 \hat{B} = 1 \rightarrow \sin \hat{B} = \frac{\sqrt{3}}{2}$

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$a^2 = b^2 + c^2 - 2bc \cos \hat{A}$

$a^2 = 14^2 + (2 + \sqrt{2})^2 - 2(14)(2 + \sqrt{2}) \frac{1}{2}$

$a^2 = 14^2 + 13 + 14\sqrt{2} - 1 - 14\sqrt{2} = 29$

الف: $\hat{A} = 6^\circ \rightarrow \hat{B} + \hat{C} = 174^\circ$

$\frac{\sin A}{a} = \frac{\sin B}{b} \rightarrow \frac{\frac{\sqrt{2}}{2}}{\frac{\sqrt{2}}{2}} = \frac{\sin B}{\frac{\sqrt{2}}{2}}$

$\sin \hat{B} = \frac{\sqrt{2}}{2} \rightarrow \hat{B} = 45^\circ, \hat{C} = 135^\circ$

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$$a^2 = b^2 + c^2 - 2bc \cos A \rightarrow r = r_1 + r_2(1)(r) \cos A \rightarrow -1 = -r \cos A \rightarrow \frac{1}{r} = \cos A$$

$$DE^2 = (9)^2 + (r^2) - 2(9)(r) \cos A = r^2 + 18 - 18 = 18 \rightarrow DE = \sqrt{18}$$

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$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$r^2 + r^2 - r = r^2 \rightarrow \frac{c^2}{b^2} = V$$

(c) 1

$$\frac{1}{r} \sin A \sin B$$

$$\frac{1}{r} \sin A \sin B = 1 \cdot \sqrt{r}$$

(c) 1

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$$\frac{(b+c)^2 - a^2}{bc(\cos A + 1)} = \frac{b^2 + c^2 + 2bc - a^2}{bc \cos A + bc} = \frac{2bc \cos A + 2bc}{bc \cos A + bc} = 2$$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$a^2 + 2bc \cos A = b^2 + c^2$$

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$$\frac{a^2 + b^2 - c^2}{a+b-c} \cdot a \rightarrow a^2 + b^2 - c^2 = a^2 + a^2 b - a^2 c \rightarrow (b-c)(b^2 + c^2 + cb) = a^2 (b-c)$$

$$b^2 + c^2 + cb = b^2 + c^2 - 2bc \cos A \rightarrow \cos A = -\frac{1}{2} \rightarrow A = 120^\circ$$

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$$a^2 = b^2 + c^2 - 2bc \cos A \rightarrow \frac{1}{r} \sin A \sin B \cdot \frac{1}{r} \sin A \sin C (r + 1 \cos A - r \cos A) = r \rightarrow r \cos A - 1 \cos A + 1 = 0$$

$$\cos A \rightarrow \frac{1}{2} \rightarrow \frac{1}{2} \cos A \geq -1$$

$$a^2 = b^2 + c^2 - 2bc \cos A = 9 + 18 - 18 \cdot \frac{1}{2} = 9 \rightarrow \frac{a}{r} = \frac{3}{3} = 1$$

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