نام و نام خانوادگی ......ساطع محمود...... پاسخنامه تشریحی تکلیف شماره ...۱۴... کلاس ...دهم تجربی A...

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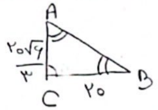
$\underset{C}{75}\ ,\ \underset{B}{45}$



$$\frac{20}{\sin A} = \frac{\frac{20\sqrt6}{3}}{\sin B}$$

$$\frac{\sin B}{\cancel{\sin A}} = \frac{\sqrt6}{3}$$

$\cancel{\sin 60}\ \ \frac{\sqrt3}{2}$

$B+C=120$

$A+B+C=180\ \} A=60^\circ$

$$\sin B = \frac{3\sqrt2}{6} = \frac{\sqrt2}{2}$$

$\boxed{C=75}$

$\boxed{B=45}$

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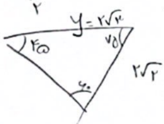
$x=3 \rightarrow$ حل

$$\frac{x}{\sin 60} = \frac{2\sqrt3}{\sin 90}$$

$\sin 60 = \frac{\sqrt3}{2}$, $\sin 90 = 1$

$\boxed{x=3}$



$$4 = \frac{2\sqrt2}{\frac{\sqrt2}{2}} = \frac{y}{\frac{\sin 45}{\frac{\sqrt2}{2}}}$$

$y=2\sqrt2$

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$b=-1$ غق

با توجه به قضیه سینوس‌ها $\rightarrow$

$$\frac{\sin C}{\sin B} = \frac{c}{b}$$

$$\frac{\sin C}{\sin B} = \frac{c}{b^2-2}$$

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

$b^2-2-b=0 \quad (b-2)(b+1)=0$

$\boxed{b=2}$

جواب $\leftarrow \boxed{b=2}$

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با توجه به قضیه کسینوس‌ها $\rightarrow$

$b^2=c^2+a^2-2ca\cos B$

$14^2 = 21^2+20^2-2\times20\times21\times\cos B$

$14^2-20^2 = 21(21-40\cos B)$

$(14-20)(34)$

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$-11 = 21-40\cos B$

$40\cos B = 32 \rightarrow \cos B = 0/8$

$\cos^2 B + \sin^2 B = 1$

$(0/8)^2 = 0/64$, $0/36$

$\boxed{\sin B = 0/6}$

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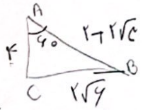
الف) $a=2\sqrt6$

$$\underbrace{CB^2}= AB^2 + AC^2 - 2(\overset{2+2\sqrt3}{AB})(\overset{4}{AC})(\overset{\frac12}{\cos A})$$

$$a^2 = (2+2\sqrt3)^2 + 16 - 4(1+\sqrt3)(4)\left(\frac12\right)$$



$$a^2 = \overbrace{(2+2\sqrt3)^2}^{4+12+8\sqrt3} - \overbrace{4(2+2\sqrt3)}^{-8-8\sqrt3} + 16 = 24$$

$a=\sqrt{24} = 2\sqrt6$

ب) $\boxed{C=30}$

با توجه به قضیه سینوس‌ها $\rightarrow \frac{4}{\sin B} = \frac{2\sqrt3}{\sin 60}\ \ \frac{\sqrt3}{2}$

$\sin B = 1$

$\boxed{B=90^\circ}$

ضلع بزرگتر: $2\sqrt{10}$

$$1\times4 = 4+1-2bc\cos A$$

$$\boxed{\cos A = \frac{1}{4}}$$

$$a^2 = \underbrace{16+36}_{52} - \underbrace{2\times4\times6}_{12}\times\underbrace{\cos A}_{1/4} \longrightarrow a=\sqrt{40}=\boxed{2\sqrt{10}}$$ 6

الف)

$$BC^2 = \underbrace{25+64}_{89}-2(5)(8)\underbrace{\cos 60}_{\frac12} = 49 \qquad BC=7$$ 7

ب)

$$S=\frac12\times5\times8\times\underbrace{\sin 60}_{\frac{\sqrt3}{2}} = \boxed{10\sqrt3}$$

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

$$b^2+c^2=a^2+2bc\cos A \qquad \frac{\cancel{a^2}+2bc\cos A+2bc-\cancel{a^2}}{bc(\cos A+1)} = \frac{2bc(\cos A+1)}{bc(\cos A+1)} = 2$$ 8

$$\cancel{a^3}+b^3-c^3=\cancel{a^3}+a^2b-ca^2$$

$$b(b^2-a^2)=c(c^2-a^2)$$

$$\frac{b}{c}=\frac{c^2-a^2}{b^2-a^2} \Rightarrow \frac{b-c}{c}=\frac{c^2-\cancel{a^2}-b^2+\cancel{a^2}}{b^2-a^2}$$ 9

$$\frac{-1}{c}=\frac{c+b}{b^2-a^2} \qquad a^2-b^2=c^2+cb$$

$$a^2=b^2+c^2+cb$$

$$bc=-2bc\cos A \qquad \cos A=-\frac12 \longrightarrow \boxed{A=120}$$

$$S=\frac12 bc\sin\theta$$

$$\frac12(3-\cos\theta)\underbrace{\sin 30}_{\frac12}(1+3\cos\theta)=2$$

$$3+8\cos\theta-3\cos^2\theta=8 \longrightarrow -3\cos^2\theta+8\cos\theta-5=0 \longrightarrow \cos\theta=1$$ 10

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

$$\boxed{a^2=20-8\sqrt3}$$