زهرا صبحانی تکلیف شماره ۱۱ — یازدهم ب فرزانه

بسمه تعالی

موسسه مالی و اعتباری ثامن الحجج(ع)
(تحت نظارت بانک مرکزی)

تاریخ :..................
شماره :..................
پیوست :..................

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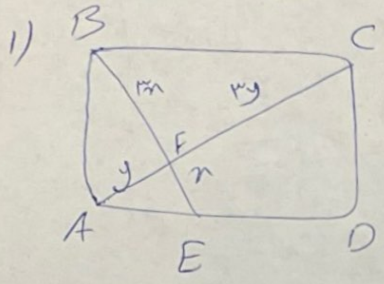

$\overset{\triangle}{ABC} : (4y)^2 = 18$

$\overset{\triangle}{ABE} : (3x)^2 = 10$

$\div \quad \frac{x^2}{y^2} = \frac{10}{18} = \frac{5}{9} \rightarrow \frac{x}{y} = \frac{\sqrt{5}}{3}$

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$\overset{\triangle}{AED} \sim \overset{\triangle}{ABC} \Rightarrow \frac{2}{x+1} = \frac{x}{15} \rightarrow x^2 + x = 30 \rightarrow x^2 + x - 30 = 0$

$(x+6)(x-5) = 0$

$x = -6$ ✗ $\quad x = 5$ ✓

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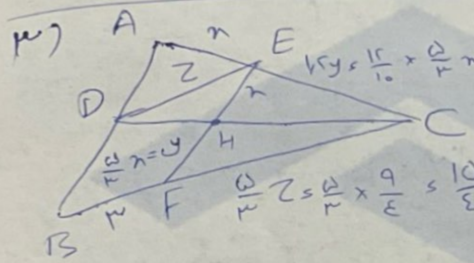

$12y = \frac{12}{10} \times \frac{5}{3} x = 2x \Longleftarrow y = \frac{5}{3} x$

$\frac{x}{3x} = \frac{z}{\frac{5}{3} z + 3} \rightarrow \frac{5}{3} z + 3 = 3z$

$3 = \frac{4}{3} z \rightarrow z = \frac{9}{4}$

$\frac{5}{3} z = \frac{5}{3} \times \frac{9}{4} = \frac{15}{4} = 3.75$

$BF + FC = 3 + 3.75 = 6.75$

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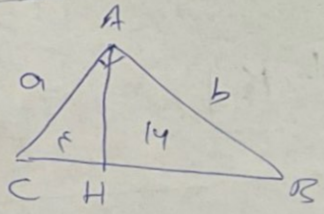

$a^2 = 4 \times 20$

$b^2 = 16 \times 20$

$\div \quad \frac{b^2}{a^2} = 4 \rightarrow \frac{b}{a} = 2$

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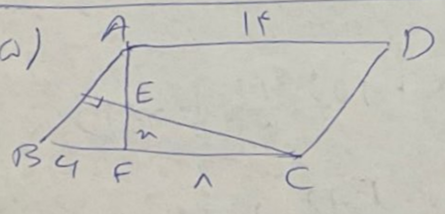

$\overset{\triangle}{EFC} \sim \overset{\triangle}{AFB}$

$\frac{x}{6} = \frac{8}{x+8} \rightarrow x^2 + 8x - 48 = 0$

$(x+12)(x-4) = 0$

$AF = 12$ ——— $x = 4$

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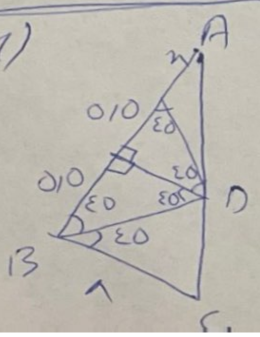

$\frac{x + 5.5}{5.5} = \frac{5.5}{2.5} \xrightarrow{\text{تفصیل در صورت}} \frac{x}{5.5} = \frac{3}{2.5} \rightarrow x = \frac{33}{5} = 6.6$

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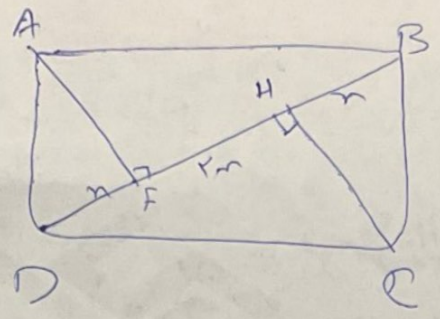

$BH = DF = \frac{1}{3} FH$

$\frac{S_{HBC}}{S_{BCD}} = \frac{1}{3} \rightarrow \frac{S_{ABC}}{S_{BCD}} \times \frac{S_{BCD}}{S_{ABCD}} = \frac{S_{HBC}}{S_{ABCD}}$

$\rightarrow \frac{1}{3} \times \frac{1}{2} = \boxed{\frac{1}{6} = \frac{S_{ABCD}}{S_{HBC}}}$

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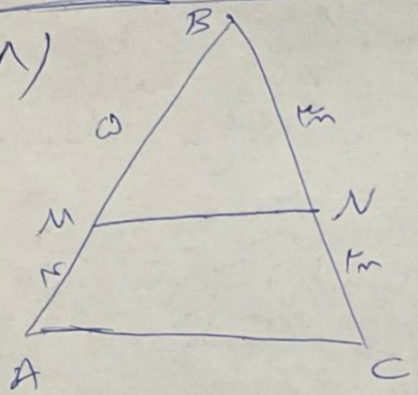

$\frac{BN}{NC} = \frac{2}{1}$ $\quad S_{ABC} = {}^{2}S_{BMN}$

$\rightarrow \frac{1}{2} \times \omega h \times AB \sin\alpha = 2 \times \frac{1}{2} \times 4 \times BM \sin\alpha$

$\rightarrow \omega AB = 9 BM$

$\frac{AB}{BM} = \frac{9}{\omega} \rightarrow \frac{BM}{AM} = \boxed{\frac{\omega}{5}}$

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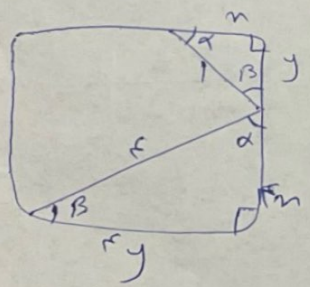
۹)



$2y = 3x + y \rightarrow 2y = 3x \rightarrow y = \frac{3}{2} x$

$x^2 + y^2 = 1 \rightarrow x^2 + \frac{9}{4} x^2 = 1 \rightarrow \frac{25}{4} x^2 = 1 \rightarrow x = \frac{2}{5}$

$y = \frac{3}{5}$

$S = 14 y^2 = 14 \times \frac{14}{25} = \boxed{10/24}$

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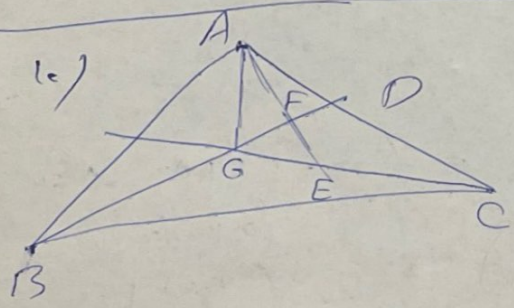

$GB = \frac{1}{4} BD$

$FD = \frac{1}{4} GD \rightarrow FD = \frac{1}{4} \times \frac{1}{4} BD$

$\rightarrow 9 FD = BD \rightarrow \frac{BD}{FD} = \boxed{9}$