

ÖZEL EGE LİSESİ
OKULLARARASI 8. MATEMATİK YARIŞMASI
8. SINIF FİNAL CEVAPLARI

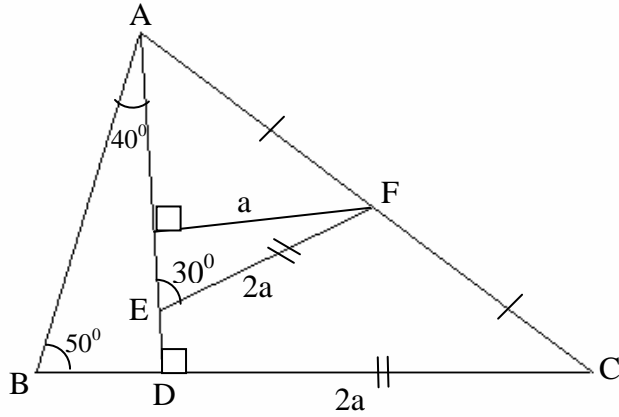
$$1) \left. \begin{array}{l} a + \frac{a}{b} + b = 8 \\ a + b = \frac{8b - a}{b} \end{array} \right\} \begin{array}{l} \frac{a \cdot (a + b)}{b} = 15 \quad (a + b)_{\min} = ? \\ a \cdot \left(\frac{8b - a}{b} \right) = 15 \end{array}$$

$$\begin{aligned} 8ab - a^2 &= 15b^2 \\ a^2 - 8ab + 15b^2 &= 0 \\ (a - 5b)(a - 3b) &= 0 \\ a = 5b &\quad a = 3b \end{aligned}$$

$$(a + b) + \frac{5b}{b} = 8 \quad (a + b) + \frac{3b}{b} = 8$$

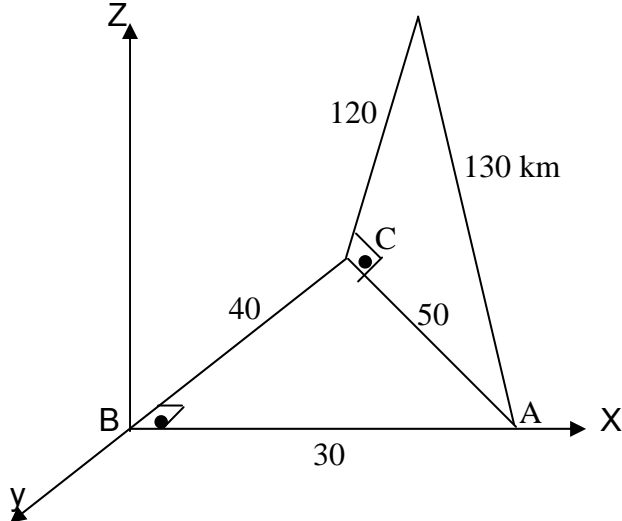
$$a + b = 3 \quad a + b = 5 \quad \Rightarrow (a + b)_{\min} = 3$$

2)



a-2a dan
 30-60-90 \triangle olur.
 $m(\angle AEF) = 30^\circ$ olur

3)



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4) $x, y \in \mathbb{Z}$
 $x^2 - x + yx + 2y = 23$
 $x^2 + 2x - 2x - x + xy + 2y - 6 = 17$
 $\quad \quad \quad \underbrace{\quad \quad \quad}_{-3x}$
 $x(x+2) - 3(x+2) + y(x+2) = 17$
 $\underbrace{(x+2)}_{-17} \underbrace{(x-3+y)}_{-1} = 17$

$x = -19$
 $x - 3 + y = -1$
 $-22 + y = -1$
 $\underline{y = 21}$

5) $\sqrt{x + \sqrt{x}} = \frac{3}{2} \sqrt{\frac{x}{x + \sqrt{x}}}$

$$\frac{\sqrt{x + \sqrt{x}}}{1} = \frac{3}{2} \frac{\sqrt{x}}{\sqrt{x + \sqrt{x}}}$$

$$2\sqrt{(x + \sqrt{x})^2} = 3\sqrt{x}$$

$$2(x + \sqrt{x}) = 3\sqrt{x}$$

$$2x + 2\sqrt{x} = 3\sqrt{x}$$

$$(2x)^2 = (\sqrt{x})^2$$

$$4x^2 = x$$

$$4x^2 - x = 0$$

$$x(4x - 1) = 0$$

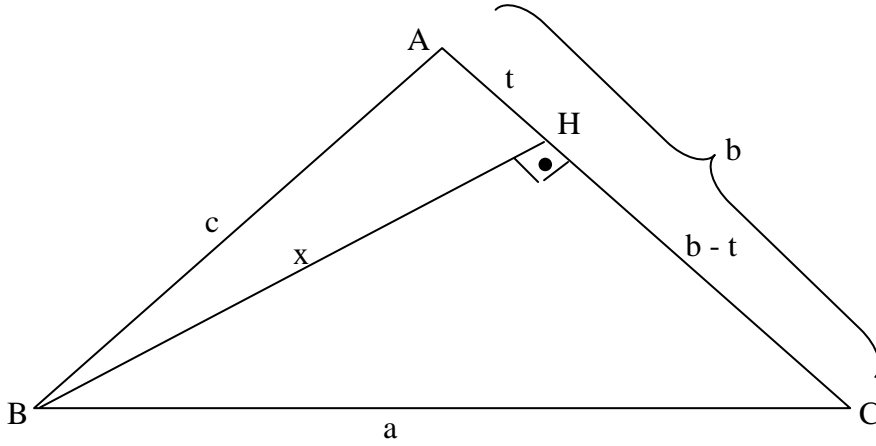
$$x = 0 \vee \underbrace{x = \frac{1}{4}}$$

sağlamaz sağlar

$$\mathcal{C} = \left\{ \frac{1}{4} \right\}$$

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6)

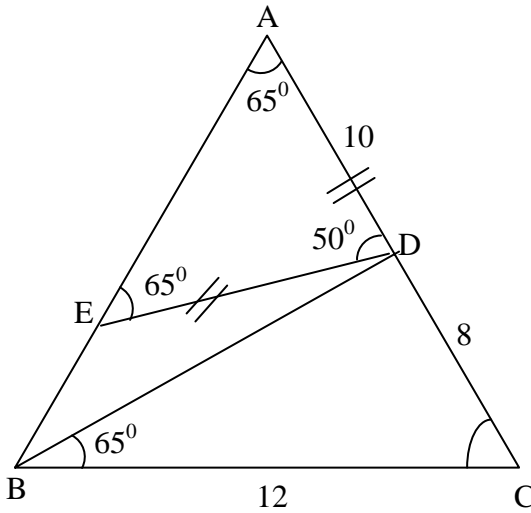


$$a \cdot b \cdot \cos C \cdot \sin A + c^2 \sin A \cdot \cos A = 26\sqrt{3}br^2$$

$$\cancel{ae} \cdot \frac{b-t}{a} \cdot \frac{x}{c} + \cancel{e^2} \cdot \frac{x}{c} \cdot \frac{t}{c} = bx - tx + xt = 26\sqrt{3} \Rightarrow bx = 26\sqrt{3}$$

$$A(\triangle ABC) = \frac{bx}{2} = 13\sqrt{3}$$

7)



$\hat{C} \rightarrow$ ortakaçı

$$\frac{|AC|}{|BC|} = \frac{|BC|}{|DC|} \Rightarrow \triangle ACB \approx \triangle BCD$$

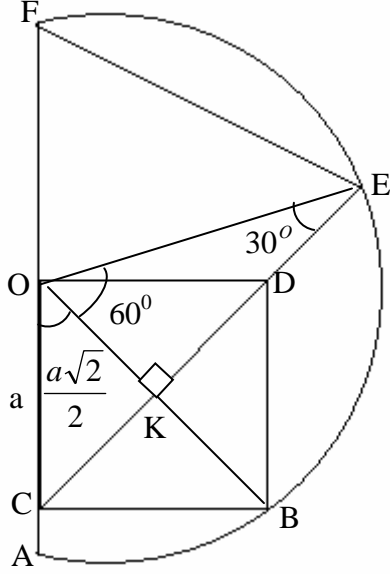
$$\frac{18}{12} = \frac{12}{8} = \frac{3}{2}$$

$$m\hat{A} = m\hat{B}$$

$$\Rightarrow m(\hat{EDA}) = 50^\circ$$

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8)



Karenin bir kenarı a ise,
 $r = a\sqrt{2}$ dir.

$$\left. \begin{array}{l} [OE] \\ [OB] \end{array} \right\} \text{ çizilir. } |OE| = a\sqrt{2} \left. \vphantom{\begin{array}{l} [OE] \\ [OB] \end{array}} \right\} \text{ ise}$$

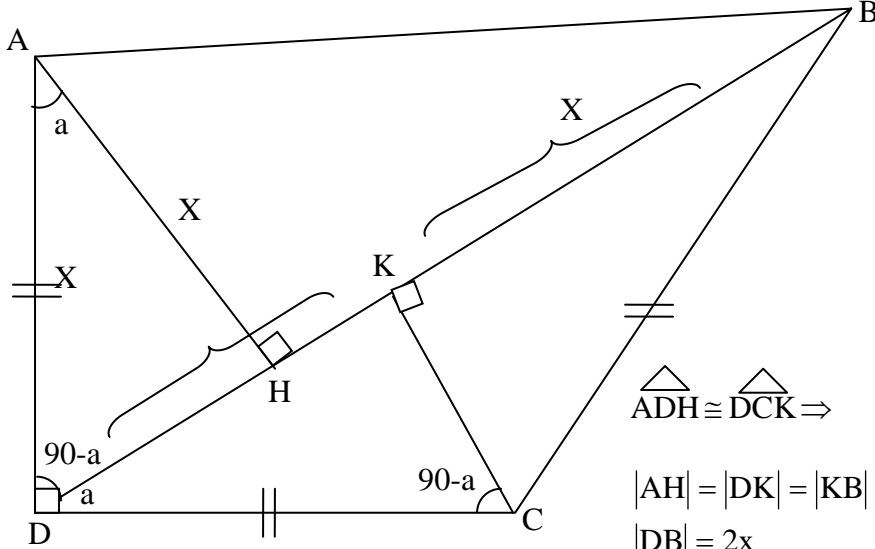
$$|OK| = \frac{a\sqrt{2}}{2}$$

$$m(\widehat{OEF}) = 30^\circ \text{ olur}$$

$$m(\widehat{EOA}) = 60^\circ + 45^\circ = 105^\circ$$

$$m(\widehat{AFE}) = \frac{105}{2} = 52,5^\circ$$

9)



$$\triangle ADH \cong \triangle DCK \Rightarrow$$

$$|AH| = |DK| = |KB|$$

$$|DB| = 2x$$

$$A(\triangle ADB) = \frac{2x \cdot x}{2} = 256$$

$$x = 16$$

$$|DB| = 2 \cdot 16 = 32$$

10) $A = 3^n + 54 + 1$

$$= 3^n + 2 \cdot 3^3 + 1 = (3^{\frac{n}{2}} + 1)^2$$

$n = 6$ olmalı

$$A = (3^3 + 1)^2 = 784$$