Ø.47
22

$|x+2y| = y+2x$

$y = -\frac{1}{2}x$

$y = -\frac{1}{2}x$

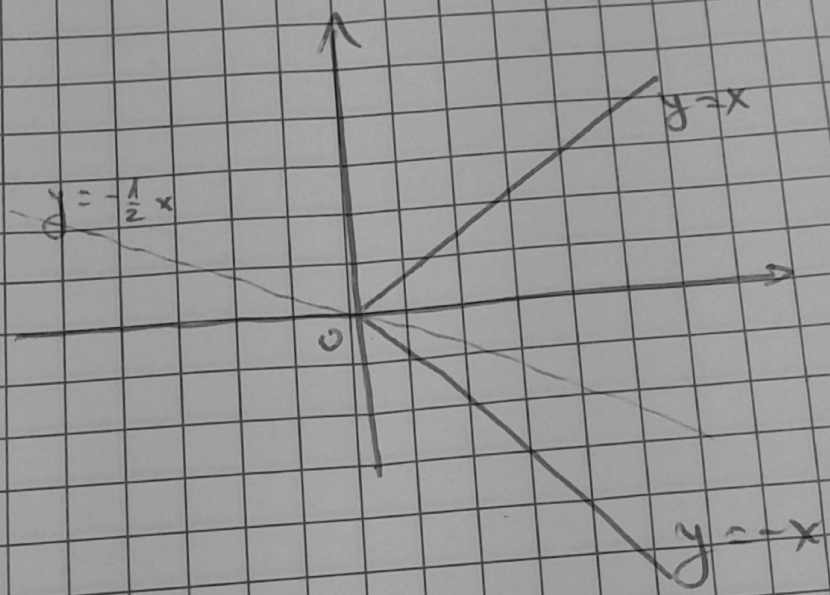
$x+2y = y+2x$

$\boxed{y = x}$

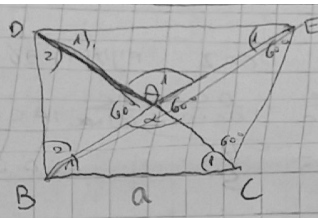
$-x-2y = y+2x$

$-3x = 3y$

$\boxed{y = -x}$



2.55
6



$\measuredangle C_1 = \measuredangle B_1 = 90 - \frac{\alpha}{2}$

$\measuredangle A_1 = 240 - \alpha$

$\measuredangle E_1 = \measuredangle D_1 = \frac{\alpha}{2} - 30$

$\measuredangle D + \measuredangle B = \measuredangle D_1 + \measuredangle D_2 + \measuredangle B_2 + \measuredangle B_1 = \frac{\alpha}{2} - 30 + 60 + 60 + 90 - \frac{\alpha}{2} = 180°$

$DE \parallel BC \Leftarrow$ (חד צדדיות משלימות 180°)

$DB = EC \Leftarrow DECB$ טרפז ש"ש.

(ב) $\triangle ABC$:

$\frac{a}{\sin\alpha} = \frac{AB}{\sin(90 - \frac{\alpha}{2})} \Rightarrow AB = \frac{a \cos\frac{\alpha}{2}}{\sin\alpha} = \frac{a}{2\sin\frac{\alpha}{2}}$

$\triangle ABE$:

$BE^2 = AB^2 + AE^2 - 2AB \cdot AE \cdot \cos(\alpha + 60) = \frac{a^2}{4\sin^2\frac{\alpha}{2}} + \frac{a^2}{4\sin^2\frac{\alpha}{2}} - \frac{2a^2\cos(\alpha+60)}{4\sin^2\frac{\alpha}{2}}$

$BE = \frac{a}{2\sin\frac{\alpha}{2}}\sqrt{2 - 2\cos(\alpha+60)} = \frac{a}{2\sin\frac{\alpha}{2}}\sqrt{2(1 - \cos(\alpha+60))} = \frac{a}{2\sin\frac{\alpha}{2}}\sqrt{2 \cdot 2\sin^2(\frac{\alpha}{2}+30)} = \frac{a\sin(\frac{\alpha}{2}+30)}{\sin\frac{\alpha}{2}}$

$\triangle ADE$:

$\frac{AD}{\sin(\frac{\alpha}{2} - 30)} = \frac{DE}{\sin(240 - \alpha)}$ ($AD = AB$) $\rightarrow DE = \frac{a\sin(\alpha - 60)}{2\sin\frac{\alpha}{2} \cdot \sin(\frac{\alpha}{2} - 30)} = \frac{2a\cos(\frac{\alpha}{2} - 30)}{2\sin\frac{\alpha}{2}}$

(2) $BE = DE \rightarrow$ $\frac{a\sin(60+\frac{\alpha}{2})}{\sin\frac{\alpha}{2}} = \frac{a\sin(\frac{\alpha}{2}+30)}{\sin\frac{\alpha}{2}}$

$60+\frac{\alpha}{2} = \frac{\alpha}{2}+30$ $\qquad$ $60+\frac{\alpha}{2} = 180-(\frac{\alpha}{2}+30)$

$\alpha = 90$