

SOLVED

ANS

.1

$$\angle ABC = 120^\circ$$

$$\angle ADB = 30^\circ$$

$$EO \perp BD$$

$$\angle EOB = 90^\circ$$

Since $\triangle ABD$ is isosceles
and $\angle ADB = 30^\circ$

$$\angle ADO = \angle ADO = 30^\circ$$

$$\angle EOD = \frac{1}{2} \angle ADO$$

Since $\triangle AED$ is isosceles
and $\angle AED = 120^\circ$

$$\angle AEC = 60^\circ$$

$$\angle ADB = 90^\circ$$

$$\triangle ADB \sim \triangle EDC$$

$$BD = 2AD$$

$$BD = AC = 2AD$$

$$AD = DC$$

$$AC = 2DC$$

$$\angle AED = 120^\circ$$

$$\angle ABC = 90^\circ$$

Since $\triangle ABC$ is isosceles
and $\angle ABC = 90^\circ$

$$\angle CAB = 30^\circ$$

$$\angle AOE = 180^\circ - 30^\circ = 150^\circ$$

סבב עוגן

$$\angle EAD = \angle EOA = 90^\circ$$

$$AE = EO$$

ו

$$AB = AE + EB$$

$$AB = EO + 2EO$$

$$\boxed{AB = 3EO}$$

(2)

$$AE = EO$$

$$\angle C = 90^\circ$$

$$DC = BO$$

$$DB = \frac{1}{2}BC$$

ו

$$DO = OB = \frac{DB}{2} = DC$$

ו

$$DO = AD$$

$$AEOD \quad \text{היפotenusa}$$

$$h_{\triangle AEO} = h_{\triangle DEO} = h$$

$$ED = 2AE$$

$$S_{\triangle AEO} = \frac{AE \cdot h}{2}, S_{\triangle DEO} = \frac{DE \cdot h}{2}$$

ו

$$2 \cdot S_{\triangle AEO} = S_{\triangle EOB}$$

$$AO = b, EO = a$$

$$AO = 3a$$

$$AO = OC = \frac{AC}{2}$$

$$AO = AO = \cancel{b}$$

$$S_{\triangle EOB} = AO \cdot AB : 2 = 3a \cdot b : 2$$

225

270

2

150

E, F, E מושג

A, D, B מושג בSM

H, C, G מושג

בנין צורה מושג

פונט נס סימן

נס סימן נס סימן

נס סימן נס סימן

נס סימן נס סימן

נס סימן נס סימן

בנין צורה מושג

בנין צורה מושג

AEB מושג

נס סימן נס סימן

נס סימן נס סימן

בנין צורה מושג

נס סימן נס סימן

AF=FC AE=ED

CFS מושג

בנין צורה מושג

PAB AB

AE=DE AF=FC

*ABC = *ABD = 90°

EB, BF פ' 150°

AE=ED=EB AF=FC=BF

AE BF 150°

*EAF = *EBF

*AED = 100°, *EAF = 140°

*EAF = *EBF = 140°

*EAB = *EBA = 40°

*AGF = *EBE - *ADE = 20°

CAF = 40°

*BFC = 180° - AFB = 140°

*FBC = *ABC - *ABF = 90 - 70 = 20°

*FCB = 20°

CD = 10, 10°

PACD = 40, 40°

10 + AD + AC = 40

10 + AD + AC = 40

AD + AC = 30

AE + AF = 25

EB + BF = 15

PAEDF = AE + AF + ED = 25 + 15 = 40

Paw

258

B

ABGO 81210

Mo 15.5

$$* 800 = 90$$

$\triangle BOC$ is right.

$$MP = BM = MC$$

$$\beta C = \beta M + MC$$

$$PC = MO + MD = 2MO$$

$$AD = DC = 2\text{ m}$$

$$S_{ABCD} = 16 \text{ cm}^2$$

$$S_n P_{CC} = \frac{\cancel{S_n P_{CC}}}{\cancel{S_n P_{CC}}} \quad \frac{BC^o MO}{2}$$

$$\frac{MO \cdot MO}{\cancel{MO}} = PG \Rightarrow \text{Se } \overset{\text{OEB}}{\underset{\text{OFEIN}}{\cancel{MO}}} \neq -4$$

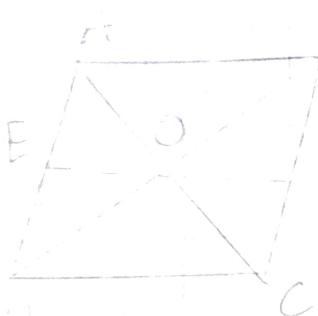
mon nö

$$\beta_C = 2M_0 = 2 \cdot 8 = 16$$

$$S_{ABCD} = BC^2 = 8^2 = 64 \text{ m}^2$$

$$PA/PC = u \cdot BC = 8 \cdot 4 = \boxed{32}$$

~~1000~~



בנין משולש בפונקציית שטח

משולש אמצעי נסיבות
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משולש אמצעי נסיבות

9. חישוב שטחים

אורך ישרים

$EF \parallel AB$

$OD = OB, AO = OC \cdot 3$

$\rightarrow EO = OF$

$AD \parallel BC, AD \parallel DC$

~~$ED \parallel BF$~~

$\Delta EOD \cong \Delta FOB$

$EO = FO$

$\blacksquare EFD \parallel DC$

$DE \parallel FO$

$EFCO$ שטח

$FE = DC$

$FE = EO + FO = 2OE$

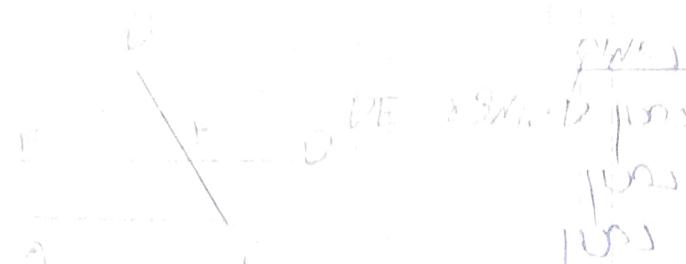
$DC = 2EO$

$h_{\Delta EDO} = h_{\Delta ODC} = h$

$S_{\Delta EDO} = \frac{h \cdot EO}{2}$

$S_{\Delta ODC} = \frac{h \cdot DC}{2}$

$\frac{S_{\Delta ODC}}{S_{\Delta EDO}} = \boxed{\frac{1}{2}}$



ר' גי

$$OF = FE$$

ב' - 5

$$OC = AB$$

$$AE = DC \text{ ו } AD = EC$$

$$\angle BAC = \angle DCA$$

$$\angle BCA = \angle DFC$$

$$\angle BAC = \angle FDC$$

$$AC \parallel DE, AE \parallel DC$$

↓

$$\angle CFD = \angle CDF$$

$$DC = FC$$

$$\angle BFE = \angle DFC$$

(2)

$$\angle BEF = \angle FDC$$

ב'

$$\angle FDC \approx \angle FEB$$

$$BF = FC, DC = EB$$

$$DC = AE$$

$$DC = BF$$

$$BF = AE$$

$$PAEDC = 30^\circ \text{ ו }$$

$$\angle ABC = 60^\circ$$

$$\angle BAC = \angle BCA = 60^\circ$$

וינטג

$$\triangle ABC \text{ שווה זווית}$$

$$BE = BF = EF = AE = FC = DC = X$$

$$AB = BC = AC = Y$$

$$P = AC + DE + AE + CD = 30$$

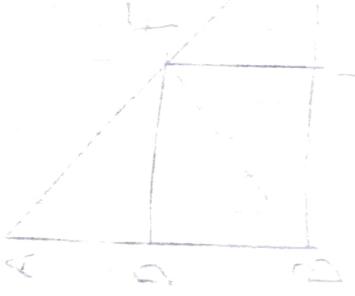
$$2X + 2Y = 30 \Rightarrow XY = 15$$

$$AB = AE + DE = 2X = Y$$

$$P_{\Delta DEF} = BE + EF + DF$$

$$P_{\Delta BEF} = X + X + X = 3X = Y$$

A	B	C	D
אנו נשים בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער
אנו נשים בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער
אנו נשים בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער
אנו נשים בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער	בנוסף לנשים הנויות בפער



150)

$\triangle ABC$ $\angle B = 90^\circ$
proj of $\angle B$ onto EF , DF

$$\angle FDB + \angle FEB = 90^\circ$$

$$\angle ABC = 90^\circ$$

$$\angle FFE = 90^\circ$$

$DOEF \parallel P\Delta N$

150) $\triangle ABC$ $\angle B = 90^\circ$
proj of $\angle B$ onto EF

$$DF = 8 \text{ m}, EF = 6 \text{ m}$$

$$EF = DB = 6 \text{ m}$$

$$DF^2 + DB^2 = DF^2$$

$$8^2 + 6^2 = BF^2 \Rightarrow BF = 10 \text{ m}$$

$$DB = AD = 6$$

$$DF = BE = 8$$

$$DE = EC = 8$$

$$AD^2 + DF^2 = AF^2$$

$$EF^2 + EC^2 = FC^2$$

$$6^2 + 8^2 = AF^2 \Rightarrow AF = 10$$

$$6^2 + 8^2 = FC^2 \Rightarrow FC = 10$$

$$AF = FC = 10$$

$$P\Delta ABC = AO + BO + DE + EC + FC + AF$$

$$P\Delta ABC = 6 + 6 + 8 + 10 + 10 + 10 = 48 \text{ m}$$

$$P\Delta ABC = 6 + 6 + 8 + 10 + 10 + 10 = 48 \text{ m}$$

points on BC $\angle B = 90^\circ$
 $AB = 6 \text{ m}$ $AC = 8 \text{ m}$
 $BC = 10 \text{ m}$

$$S_{ABC} = S_{AOB} - S_{AOE}$$

$$AB = 2 \cdot AD = 12 \text{ m}$$

$$BC = 2 \cdot BE = 16 \text{ m}$$

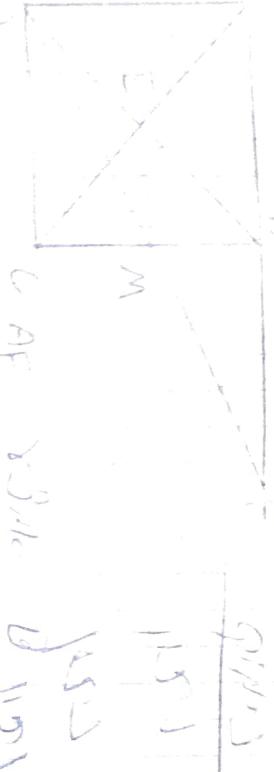
$$S_{AOB} = \frac{AB \cdot BC}{2} = 96 \text{ m}^2$$

$$S_{AOE} = \frac{AB \cdot BE}{2} = 24 \text{ m}^2$$

$$S_{ABC} = 96 - 24 = 72 \text{ m}^2$$

Ques 3

8



$$AB = DC = BF$$

$$AB = DF$$

$$\angle BCD = 90^\circ$$

$$\angle CBF = \angle BCD$$

$$\angle MCN = \angle BMF$$

$$\angle MCN - \angle MCN =$$

0

~~Side BN~~ ~~is equal to~~ ~~BN~~

$$\angle MDC = \angle MFB$$

ab

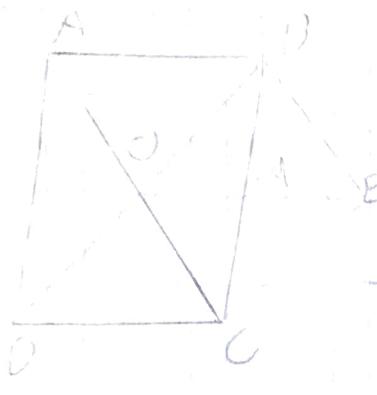
$$\triangle MCN \cong \triangle MFB$$

$$MN = MF, BM = MC$$

6

$$\triangle MCN \cong \triangle MFB$$

6



מ长时间 $\angle BAE = \alpha$

$AB \parallel OE, AB = OE$

$AB \parallel DC, AB = DC$

$OE \parallel DC, OE = DC$

$CDOE$ מ长时间

$OECD$ מ长时间

$\angle BDC = 90^\circ$

$AC \perp BD$

$ABCD$ מ长时间

$MB = MC, DO = CO$

~~AB, DC, ME, CO, DO, BO, OM, OM, BM, CM~~

$h_{AOM} = h_{DOM}$

$OM = OM$

$AB = DC$

$$S_{COM} = \frac{h_{COM}(MO + AO)}{2}$$

$$S_{BMO} = \frac{h_{BMO}(MO + DO)}{2}$$

$$S_{COM} = S_{BMO}$$

$MO \parallel DC$

$MO \parallel DC$

סס פתרון

א שפט דואו, מיליגן

טבוקי פיתוח, גיאומטריה

9/13/11

(5) ~~ANALOGY~~

AM-MC = DM
ABC = ABIOC

ABCD = ~~ABCD~~ ~~TBA~~
MC = ~~MC~~ ~~MC~~

ABCDEF

EFGHIAB

*DEF-EFEG

*FOH=EBAB

*DEF=EBAB, *CFE=FBFH

*DEF = *FEG = *CFE

EGLIFB

EFDG

FBAE

EFDA

EFDA

FO=AE

EG-FD

EG=AE

CFHEG

CFNEO

ADIDC

EFIDC

EDCF

EDCF

*DEO = *GEO

EO=Eo

*DOE = *EOG = 90°

$\triangle DEO \cong \triangle GEO$

DE = EG = AE = 70 cm

$\angle B = 60^\circ$

$\triangle ADG \cong \triangle EBG$

$\triangle ADG = 30^\circ$

$AG = GB, GB = 10$

$AO = 2AG = 12$

$AO = BC = 12$

9.1.1

225

$$DGA = \angle CHB = 90^\circ$$

$$DG = CR$$

$$\tan DG = \frac{1}{\tan C} \Rightarrow \tan DG = \frac{1}{3}$$

$$\Delta ADO \cong \Delta OCK$$

$$AG = KB = 6$$

$$DG \parallel CK$$

~~$$DK = CR$$~~

$$DC \parallel AG$$

$$DC = GK$$

$$DC = \cancel{AB} \Rightarrow DC = BK$$

$$DC = u$$

$$PABCD = AB + DC + AD + BC$$

$$PABCD = u + v$$

$$AE = \frac{AD}{2} \Rightarrow AE = \frac{6}{2}$$

$$AE : EG = 6 : 10 = FB$$

$$GB : EF = 10 : 10 = 1$$

$$PEFGB = EF + GB +$$

$$+ EG = FB$$

$$PEFGB = 32$$

$$AG^2 + DG^2 = AO^2$$

$$36 + DG^2 = 100$$

$$DG = \sqrt{100}$$

$$S_{\triangle ADG} = \frac{AG \cdot DG}{2}$$

$$= \frac{6 \cdot 10}{2} = [3 \cdot 10]$$

מינימום סכום מינימום

הערך המינימלי

הערך המינימלי

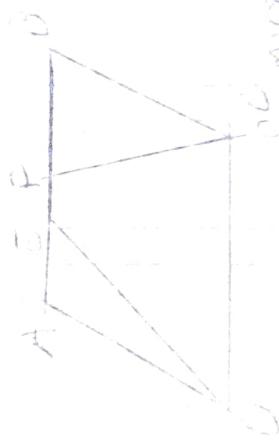


Fig 1

$$150^{\circ}$$

right angled prism

bottom face ABCD

top face EFGH

vertical faces ABCD-EFGH

vertical faces EFGH-ABCD

vertical faces ABCD-EFGH

vertical faces EFGH-ABCD

front face

back face

left face

right face

top face

bottom face

left vertical face ABCD-EFGH

right vertical face EFGH-ABCD

front vertical face ABCD-EFGH

back vertical face EFGH-ABCD

top vertical face ABCD-EFGH

bottom vertical face EFGH-ABCD

left side vertical face ABCD-EFGH

right side vertical face EFGH-ABCD

top side vertical face ABCD-EFGH

bottom side vertical face EFGH-ABCD

left bottom vertical face ABCD-EFGH

right bottom vertical face EFGH-ABCD

front bottom vertical face ABCD-EFGH

back bottom vertical face EFGH-ABCD

ABCDEF right angled prism

$$AE = EF = FG$$

$$AB = AE + EF + FD$$

$$AD = GF$$

$$AD = DC = BE$$

$$AO \parallel DC$$

$$AO \parallel EF \parallel DC$$

$$AO \parallel EF \parallel DC$$

$$AO \parallel DC$$

$$h(AB)$$

$$S_{EBCD} = 2hEF$$

$$S_{ABCD} = 3hEF$$

$$\frac{S_{ABCD}}{S_{EBCD}} = \frac{3hEF}{2hEF} = 1.5$$

$$DC = 100, S_{EBCD} = 96\text{ cm}^2$$

$$DC = 100, S_{ABCD} = 144\text{ cm}^2$$

$$S_{ABCD} = h \cdot DC$$

$$S_{ABCD} = h \cdot 100 = 144\text{ cm}^2$$

$$h = \frac{144}{100} = 1.44\text{ cm}$$

$$h = 1.44\text{ cm}$$

$$S_{EBCD} = 384\text{ cm}^2$$

$$S_{ABCD} = 576\text{ cm}^2$$

$$1.44\text{ cm}^2 = S_{EGF}, q = 2$$

$$DC = 100, S_{EGF} = 96\text{ cm}^2$$

$$\Delta FOC = 200\text{ cm}^2$$

$$BC = 200, S_{EGF} = 96\text{ cm}^2$$

(c)

$$h = 80$$

150

100

100

100

100

100

100

100

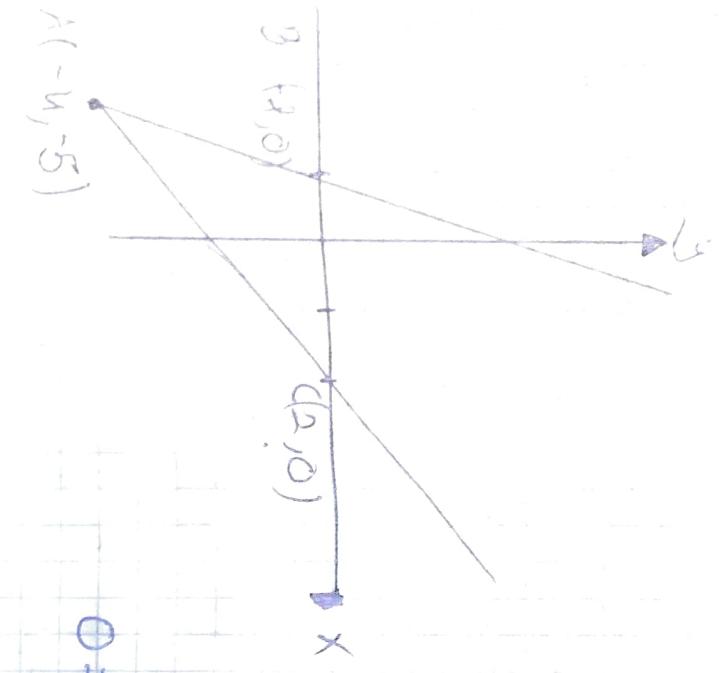
100

100

100

100

(d)



$$m_2 = \frac{0+5}{2+4} = \frac{5}{6}$$

~~$$y_2 = -\frac{5}{6}x + b$$~~

$$y_2 = \frac{5}{3}x + \frac{5}{3}$$

~~$$my_2 = \frac{5}{3}x + \frac{5}{3}$$~~

$$0 = \frac{25}{6} + b$$

$$3 = \frac{25}{6}x + -\frac{10}{6}$$

~~$$b_{ABC} = |BA| \cdot 5$$~~

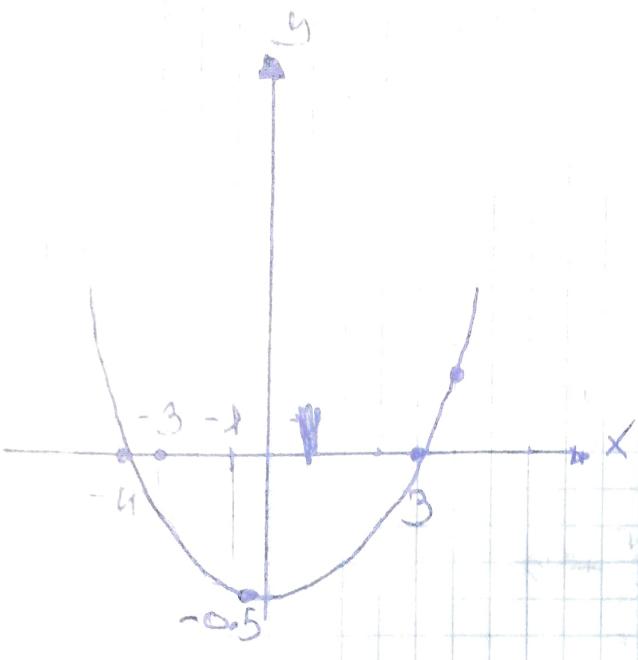
$$BC = x_C - x_A = 2 + 1 = 3$$

$$S_{ABC} = \frac{BC \cdot h}{2} = \frac{3 \cdot 5}{2} = 7.5$$

$$x > -1$$

$$b_1(0) - 20 \geq m_1(x) = \frac{-5+10}{-4+0} = -1.25$$

$$C(x) = -1.25x - 10$$



$$y = (x-3)(x+4)$$

.2



$$y = x^2 - 3x + 4x - 12$$

$$y = x^2 + x - 12$$

$$x = \frac{-1}{2} = -0.5$$

$$y = (-0.5 - 3)(-0.5 + 4)$$

$$y = -12.5$$

$$\alpha > 0 \min\left(\frac{1}{2}, -12.5\right)$$

$$x = -\frac{1}{2} \text{ : } \text{פונקנו } 13$$

$$(4, 8) \Rightarrow x = -0.5 - 4.5 = -5$$

פונקנו
 פונקנו
 פונקנו
 פונקנו
 +4.5

$x < -0.5$ פונקנו

$$y = -2x + 3$$

$$\begin{pmatrix} -1, & +5 \\ 1, & 5 \end{pmatrix}$$

$$y = -2 \cdot (-1) + 3 = 5$$

X

$$y = -2 \cdot 1 + 3 = 1$$

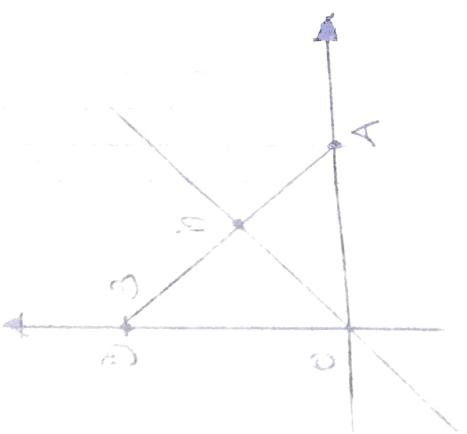
$$(0, 1)$$

$$y = -2 \cdot 0.5 + 3 = 2$$

$$(0.5, 2)$$

$$\begin{matrix} \cancel{y=0} \\ (0, 0) \end{matrix} \Rightarrow m = 1$$

$$\boxed{y=x}$$



2

2

(2)

$$x = -2x + 3$$

$$\boxed{x=1}$$

$$y = 1$$

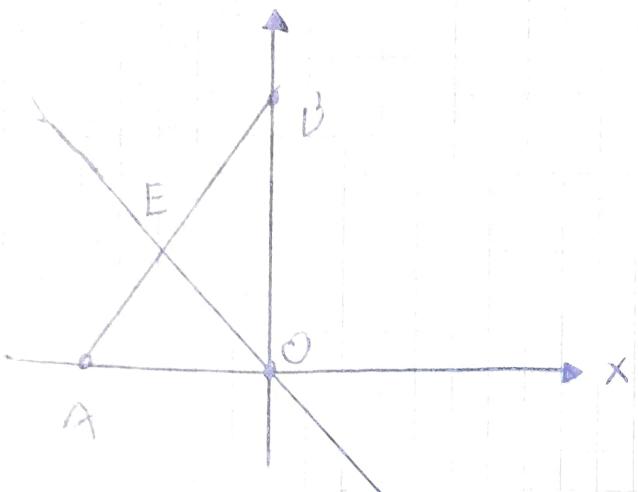
$$h(x) = x$$

$$BC = |y_0| = 3$$

$$S_{\Delta BOK} = \frac{h \cdot BC}{2} = \frac{3 \cdot 1}{2} = 1.5$$

im

$$= 1.5$$



$$y = ux + b \Rightarrow AB$$

$(1, 7)$

$$y = u \cdot 1 + b = 7 \quad \checkmark$$

$(2, 15; 12)$

$$y = u \cdot 2 + b = 13 \quad \times$$

$(-2, -11)$

$$y = u \cdot (-2) + b = -5 \quad \times$$

$(0, 25, b)$

$$y = u \cdot \frac{0}{0} + b = b \quad \checkmark$$

$$(0, 0) \quad (1, -2) \quad m = \frac{-2 - 0}{1 - 0} = -2$$

$$b=0$$

$$E(x) = -2x$$

$$hx + b = -2x$$

$$x = -0.5$$

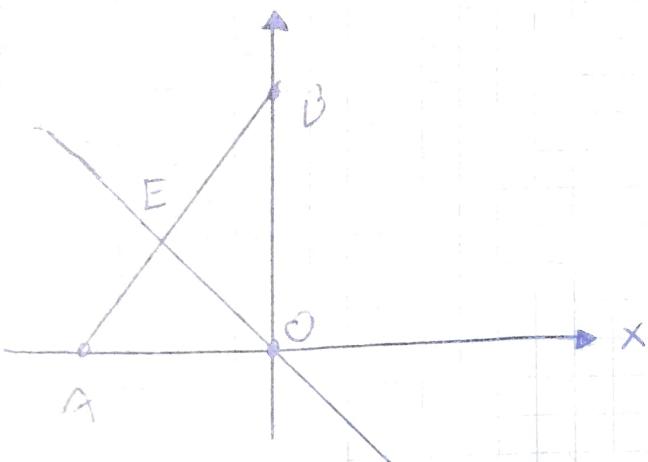
$$y = -2 \cdot (-0.5) = 1$$

E ~~(0.5, 1)~~ $(-0.5, 1)$

$$h \Delta BOE = |xE| = 0.5$$

$$BO = |yB| = 3$$

$$S_{\Delta BOE} = \frac{h \cdot BO}{2} = \frac{3 \cdot 0.5}{2} = 0.75$$



$$y = ux + 3 \Rightarrow AB$$

$(1, 3)$

$$y = u \cdot 1 + 3 = 3 \quad \checkmark$$

$(2, 12)$

$$y = u \cdot 2 + 3 = 12 \quad \times$$

$(-2, -4)$

$$y = u \cdot (-2) + 3 = -5 \quad \times$$

$(0, 25), u$

$$y = u \cdot \frac{1}{4} + 3 = 25 \quad \checkmark$$

$$(0, 0) \quad (1, -2) \quad m = \frac{-2 - 0}{1 - 0} = -2$$

$$b = 0$$

$$t(x) = -2x$$

$$ux + 3 = -2x$$

$$x = -0.5$$

$$y = -2 \cdot (-0.5) = 1$$

$E \quad (-0.5, 1)$

$$h \triangle BOE = |xE| = 0.5$$

$$BO = |yB| = 3$$

$$S_{\triangle BOE} = \frac{h \cdot BO}{2} = \frac{3 \cdot 0.5}{2} = 0.75 \text{ cm}^2$$

$$y = \frac{3x - 20}{4} \Rightarrow y = \frac{3}{4}x - 5$$

(0.5, 4)

$$y = 0.5 \cdot \frac{2}{2} + 5 = -0.5x$$

(1, -2)

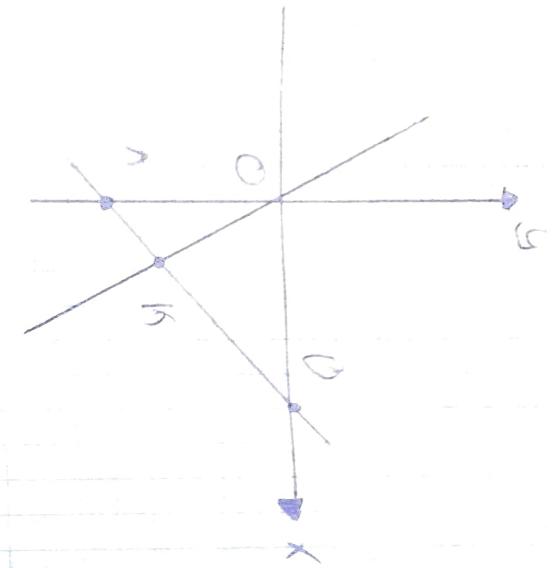
$$y = -0.5x - 5 = -0.5x$$

(0.25, -4.5)

$$y = \frac{2}{2} \cdot 0.25 - 5 = -4.5$$

(-2.5, 2)

$$y = 0.5 \cdot (-2.5) - 5 = -4.75$$



$$(1, 3) \stackrel{b=0}{\oplus} (0, 0) \quad m_f(x) = \frac{3-0}{1-0} = 3$$

$$f(x) = -3x$$

$$2x - 5 > -3x \Rightarrow x_k = 2 \quad h_{\Delta OH\theta} = |x_k| = 2$$

$$AO = |y_A| = 5$$

$$S_{\Delta OKB} = \frac{AO \cdot h}{2} = \frac{5 \cdot 1}{2} = 2.5$$

$$0 = 2x - 5 \Rightarrow x_0 = 2.5 \quad OB = |x_0| = 2.5$$

~~sinus cos~~

$$AB^2 = AO^2 + BO^2$$

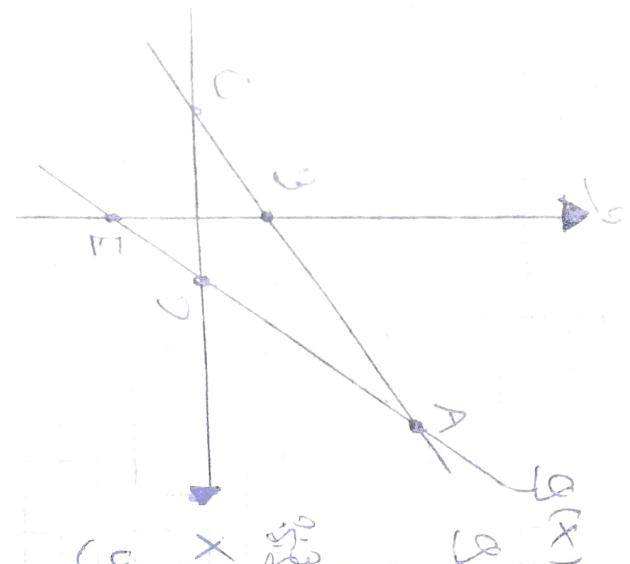
$$AB^2 = 25 + 6.25$$

$$AB = 5.59$$

$$g(x) = hx - x - 3$$

$$g(x) = 3x - 3$$

$$(-x) = \frac{2x+1}{5}$$



$$y_B = bAC = 2 \cdot 2$$

$$B(0, 2)$$

$$y = 3x$$

$$E(0, -3)$$

$$xC \Rightarrow C = \frac{2x+1}{5} \Rightarrow xC = -\frac{5}{5}$$

$$C(-5, 0)$$

$$xD \Rightarrow 0 = 3x - 3 \Rightarrow xD = 1$$

$$D(1, 0)$$

$$3x - 3 = \frac{2x+1}{5}$$

$$25x - 15 = 2x + 1$$

$$x = 2$$

$$y = 3 \cdot 2 - 3 = 3$$

$$A(2, 3)$$

$$x = -5.5$$

$$x = 1$$

$$(0, 0) \Rightarrow b = 0$$

$$m = m_{\text{gyr}} = 3$$

$$y = (x-2)(x+3)$$

↓ ↓

$$x=2$$

$$x=-3$$

oder nicht

$$x = \frac{2-3}{2} = -0.5$$

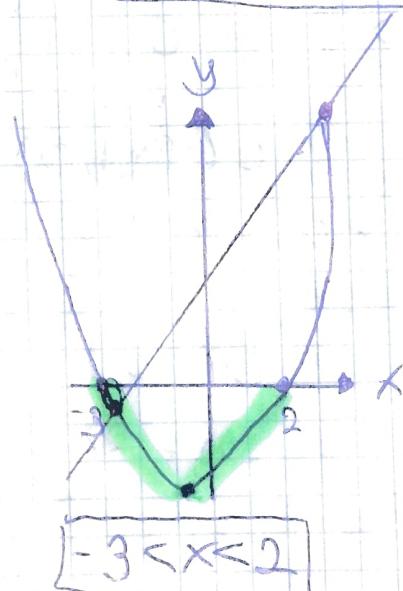
x3 zw.

$$y = (-0.5-2)(-0.5+3)$$

$$y = -6.25$$

$$a > 0 \quad \min(-0.5, -6.25)$$

$$\boxed{(x-2)(x+3) < 0}$$



$$(x-2)(x+3) = 0$$

↓ ↓
 $x=2$ $x=-3$

$$a > 0$$

min

$$(x-2)(x+3) = 2x + 6$$

18.3

$$(x-2)(x+3) - 2(x+3) = 0$$

$$(x-4)(x+3) = 0$$

↓ ↓

$$x=4 \quad x=-3$$

$$y = 2 \cdot 4 + 6 = 14$$

$$y = 2 \cdot (-3) + 6 = 0$$

$$D = \alpha / C = 3$$

$$y > 0$$

$$C < -6.825$$

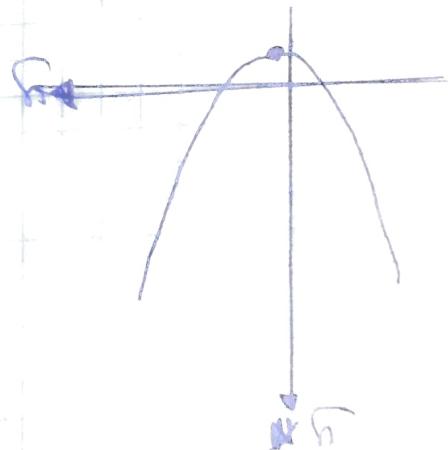
$$y = -6.825 + C$$

$$y = 6.825 - (x - 1)^2$$

$$x = \frac{y}{6} + 1$$

or

$$y = 2x^2 - 9x + C$$



$$(a) \quad x^2 + 2x + 3 \leq 0, \quad \boxed{y = x^2 + 2x + 3}$$

$$(b) \quad \text{minimum value} \quad \& \quad D = 0 \cdot x_1 + 0 \cdot x_2 \leftarrow 0 \cdot x_1 + 0 \cdot x_2 = 0$$

$$(c) \quad " " " \quad \& \quad D < 0 \leftarrow (x - 1)(x - 3) < 0$$

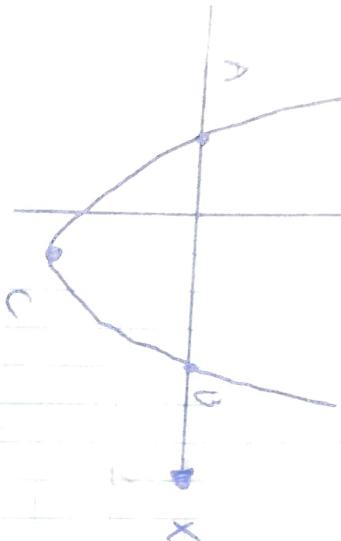
$$(d) \quad \text{maximum value} \quad \& \quad 0 > 0 \cdot x_1 + 0 \cdot x_2 = 0$$

6.

$$y = x^2 - 5x + 6$$

$$y = x^2 - 5x + 6$$

(53)



$$\textcircled{1} \Leftrightarrow (x+1)(x-6)$$

$$\begin{array}{l} \uparrow \\ x = -1 \end{array}$$

$$\begin{array}{l} \downarrow \\ x = 6 \end{array}$$

$$A(-1, 0), B(6, 0)$$

$$x_C = \frac{6+(-1)}{2} = 2.5$$

$$y_C = 2.5^2 - 5 \cdot 2.5 - 6 = -22.5$$

$$C(2.5, -22.5)$$

$$AB = x_B - x_A = 6 - (-1) = 7 \text{ cm}$$

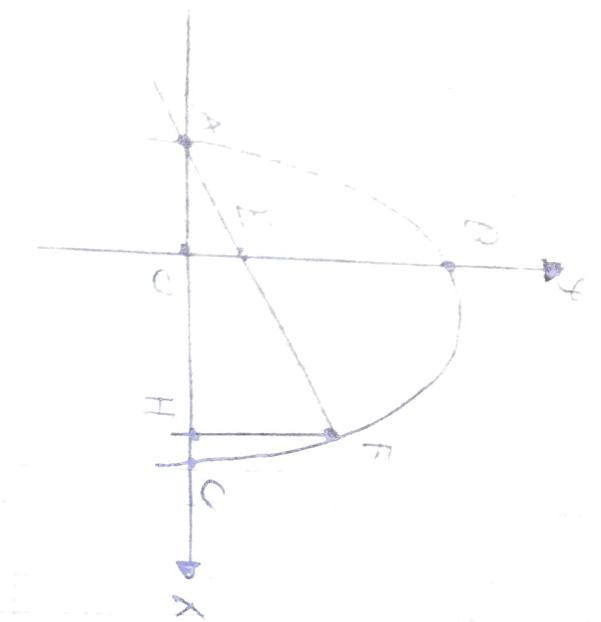
$$h_{ABC} = |y_C| = 22.5$$

$$S_{\triangle ABC} = \frac{h \cdot AB}{2} = \frac{22.5 \cdot 7}{2} = 78.75$$

$$y = -x^2 + 2x + 8$$

$$y = x^2 \Rightarrow AF \Rightarrow mx+b$$

(5)



$$OH = h_{OEH} = |xH| = 3$$

$$-x^2 + 2x + 8 = x^2$$

$$-x^2 + x + 6 = 0$$

$$HOHF = HF = 5$$

$$AH = XH - XA = 3 - (-2) = 5$$

$$x = 3 \quad k = -2$$

$$S_{\Delta HAF} = \frac{5}{2} \cdot 5 = 25$$

$$(3-x)(x+2) = 0$$

$$3 = XF = XH \Rightarrow FH$$

$$EO = |y_E| = b_{AF} = 2$$

$$FH = |y_F| = 5$$

$$y = -x^2 + 2x + 8 = 5$$

$$S_{EOHF} = \frac{(EO + HF)OH}{2} = \frac{(2+5)5}{2} = 10.5$$

$$AO = |XA| = 2$$

$$h_{AAEO} = EO = 2$$

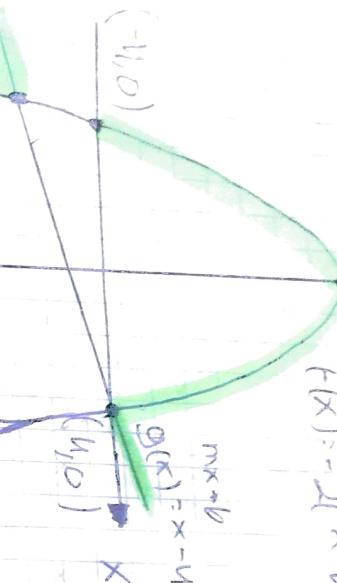
16

$$S_{\Delta AEC} = \frac{1}{2} AC = \frac{2 \cdot 2}{2} = 2 \text{ in.}$$

55

$$\text{Graf } f(x) = -2(x-u)(x+u)$$

$$(u, 0), (-u, 0)$$



$$-2(x-u)(x+u) =$$

$$(-u, 0)$$

)

9.

$$-2x^2 + 32 > 0 \quad \text{p.d.} \quad x-u > 0$$

$$x^2 - 16 > 0 \quad \text{p.d.} \quad x > u$$

$$-2x^2 - x + 3 < 0$$

$$-u < x < u$$

$$-u < x < u$$

$$-u < x < u$$

$$(x-u)(x+u) = 0$$

$$x=u \quad x=-u$$

$$x < -u \quad \text{p.d.} \quad x > u$$

$$x < -u \quad \text{p.d.} \quad x > u$$

$$x < -u \quad \text{p.d.} \quad x > u$$

$$y = -2(x-u) = 32$$

$$b = 32$$

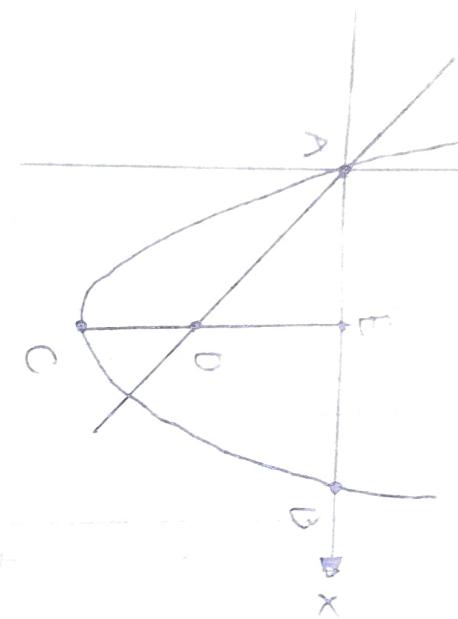
$$m_1 = m_2 = 2$$

$$m_1 = m_2 = 2$$

$$[y = x + 32]$$

(56)

$$f(x) = x^2 - 6x \quad g(x) = -x \Rightarrow mx+b$$



$$O = x^2 - 6x$$

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

$$x=0 \quad x=6$$

$$AB = |x_B| = 6 \text{ cm} \quad A(0,0) \quad B(6,0)$$

$$h_{\Delta ABO} = |y_D| = 3 \text{ cm}$$

$$SA_{ABO} = \frac{AB \cdot h}{2} = \frac{6 \cdot 3}{2} = 9 \text{ cm}^2 \quad X_E = X_C = 3$$

$$h_{\Delta ABC} = |y_C| = 9 \text{ cm} \quad E(3,0)$$

$$SA_{ABC} = \frac{AB \cdot h}{2} = \frac{6 \cdot 9}{2} = 27 \text{ cm}^2 \quad y = 3^2 - 18$$

$$C(3,-9)$$

$$y = -x$$

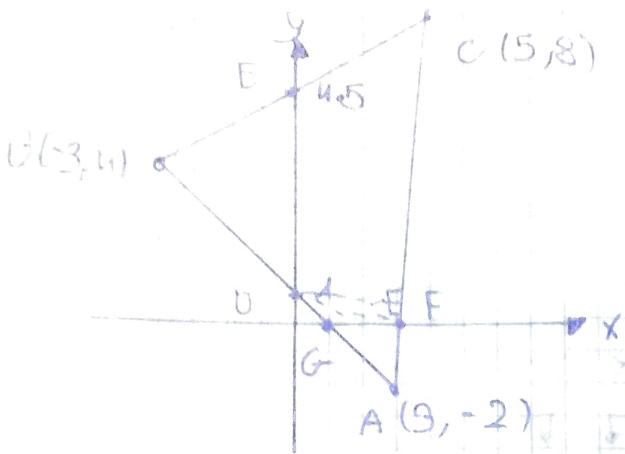
$$D(3,-3)$$

$$m_{BO} = \frac{0 - (-3)}{6 - 3} = 1$$

$$O = 6 + b$$

$$b = -6$$

$$BO = x - 6$$



(5)

$$m_{AC} = \frac{8 - (-2)}{5 - 3} = 5 \quad .10 (1)$$

$$h = 3 + b$$

$$b = 1$$

$$AC \Rightarrow y = -x + 1$$

MP (2)

$$m_{BC} = \frac{8 - 4}{5 - 3} = 2$$

$$h = \frac{5}{2} + b$$

$$b = 1.5$$

$$BC \Rightarrow y = \frac{x}{2} + 1.5$$

(3)

$$m_{AC} = \frac{8 - (-2)}{5 - 3} = 5$$

$$8 = 5 \cdot 5 + b$$

$$b = -17$$

$$AC \Rightarrow y = 5x - 17$$

$$ED = XE - XD = 1.5 - 1 = 0.5 \quad .11$$

$$h_{\triangle EDB} = |XB| = 3 \quad .11$$

$$S_{\triangle EDB} = \frac{h \cdot ED}{2} = \frac{3 \cdot 0.5}{2} = 0.75 \quad .11$$

~~AB~~

$$GF = XF - XG = 2.7 \text{ m}$$

$$h_{DG} = (yD) \approx 1 \text{ m} \therefore h_{AGF} = 2 \text{ m}$$

$$S_{AGF} = 2.7 \text{ m}^2 \quad .12$$

~~S_{triangle}~~

$$S_{\triangle ADF} = 3.6 \text{ m}^2$$

15

14

$$0 < x^2 - 4x + 3$$

Q

$$f(x) > 0 \text{ für}$$

$$(x-1)(x-3) > 0 \text{ für } x < 1 \text{ oder } x > 3$$

$$0 < 2x^2 - 5x - 3$$

$$25 + 8 = 33$$

↓

Gleich. System löse

$$g(x) = 2x^2 - 7x - 3$$

$$2x^2 - 5x - 3 = x^2 - 3x - 3$$

$$x^2 - 2x - 8 = 0$$

$$\Delta AADC = 49 \quad y_A - 11 = 87 - 66 = 21 \quad (x-11)(x+2) = 0$$

$$\Delta ABC = \frac{b \cdot BC}{2} = \frac{5 \cdot 6}{2} = 15 \text{ cm}^2 \quad x = 11 \quad x = -2$$

$$y = 4 + 6 + 7 = 17$$

$$y = 16 - 12 + 7 = 11$$

A(-2, 17) B(4, 11)

10)

$$XA = XD, YA = YB$$

$$A(1, 1)$$

$$X_C = X_B, Y_C = Y_D$$

$$C(2, 4)$$

$$ABCD \text{ trapezoid}$$

$$AD = y_A - y_D = 2 - 1 = 1 \text{ unit}$$

$$AD = XD - XA = 2 - 1 = 1 \text{ unit}$$

$$S_{ABCD} = AD \cdot AB = 1 \cdot 8 = 8 \text{ units}^2$$

~~$$AB^2 = 8^2 = 64 \text{ units}^2$$~~

~~$$AB = \sqrt{64} = 8 \text{ units}$$~~

~~$$\begin{aligned} AB &= \sqrt{8^2 + 1^2} = \sqrt{65} \text{ units} \\ AB &= \sqrt{65} \text{ units} \end{aligned}$$~~

$$MAC: \frac{12 - 1}{1 - 9} = -1$$

$$m_{BD} = \frac{12 - 4}{9 - 1} = 1$$

$$12 = -x + b$$

$$b = 13$$

$$AC = 2y = -x + 13$$

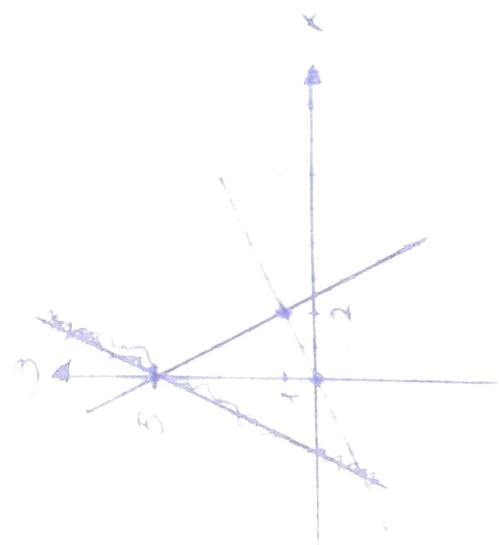
$$12 = 9 - b$$

$$b = 3$$

$$DD = 2y = x - 3$$

$$m = \frac{2-7}{4-3} = -2$$

$$(3, -1), (2, 3)$$



$$\begin{aligned} 3 &= -2+6 & b=5 \\ y &= 2x+5 \end{aligned}$$

$$(0, 5)$$

$$O: -2x+5$$

$$x=2.5$$



$$(2.5, 0)$$

$$(0, 0), (2, 4)$$

$$\begin{array}{ll} b=0 & m=0.5 \end{array}$$

$$y = 0.5x$$

$$\begin{array}{l} (2, 4) \\ mAB = \frac{6-0}{8-3} = 2 \end{array}$$

$$b=6$$

$$y = 2x + 6$$

$$mDC \Rightarrow C(2, 4) \quad mDC = 1$$

$$y = 4 + 6 \quad b=10$$

$$C(2, 10)$$

$$y = 10x$$

$$\begin{aligned} AC^2 &= (10, 0)^2 + (12, 4)^2 \\ &= 100 + 144 \\ &= 244 \\ mAC &= \frac{10-4}{12-0} = \frac{6}{12} = \frac{1}{2} \end{aligned}$$

60	15	0
20	-15 - y	x
60	$\frac{20}{x} = \frac{20}{y}$	$x > 2$ min.

$$\frac{60}{x+2} + \frac{20}{x} = 15 \quad | \cdot x(x+2)$$

$$0 < y < 15$$

$$60x + 20x + 40 = 15x^2 + 30x$$

$$15x^2 - 50x - 40 = 0$$

$$(x-4)(x+\frac{2}{3}) = 0$$

$$x=4 \quad x = -\frac{2}{3}$$

$$\frac{60}{y+2} = y \Rightarrow y = 10$$

$$5 \cdot 10 = 50$$

15 min. 10 min.



Side design piece
pointed paper

$$\begin{cases} AB > h_1 \\ BC > h_2 \\ AC > h_3 \end{cases}$$

10 min.
10 min.
10 min.

$$x^2 + y^2 = 18$$

$$\frac{5}{x+y} + \frac{5}{x-y} = 1$$

$$x_1 - \frac{y_1}{2} = 4$$

$$x^2 + (x+4)^2 = 18$$

$$2x^2 + 8x + 16 = 18$$

$$2 + \frac{5y}{2} + y - 1 = 4$$

$$6 + 2y + 3y = 5$$

$$y = 2$$

$$\boxed{x=20}$$

$$\boxed{y=5}$$

$$-2x^2 + 8x + 16 = 0$$

o.G.

$$(x-2)(x+24) = 0$$

$$\boxed{x=-24}$$

$$x+y = 19 \Rightarrow x=19-y$$

$$x = 19 - 5 = 14$$

$$5, 12$$

$$\frac{x-y}{y+x} = \frac{2}{13}$$

$$\frac{2x-y}{2x+y} = \frac{2y+6}{y}$$

$$6y - 8y = 2y + 6$$

$$5y = 60$$

$$\boxed{y=12}$$

$$x = 29 - 12 = 9$$

$$0.15250$$

+

162500 8037 - 603 ex

" " point $\sqrt{89} = y$

$$2x+2y \quad x, y > 0 \quad | \text{Pdn Se}$$

$$\boxed{y = 50}$$

$$\boxed{y^2 - x^2 = 175}$$

$$\boxed{y = 50}$$

$$\boxed{y^2 = 175 + x^2}$$

$$\boxed{y^2 = 2500}$$

$$\boxed{y^2 = 175 + x^2}$$

$$\boxed{x = 25 - y}$$

$$(y-x)(y+x) = 175$$

~~$$(2y-25)(25-y) = 175$$~~

~~$$175 + x^2 - 2500$$~~

~~$$175 + x^2 - 2500$$~~

~~$$50y - 625 = 175$$~~

~~$$(175 + x^2) = 2500$$~~

~~$$50y = 800$$~~

~~$$x^2 + 175x - 2500 = 0$$~~

~~$$y = 16$$~~

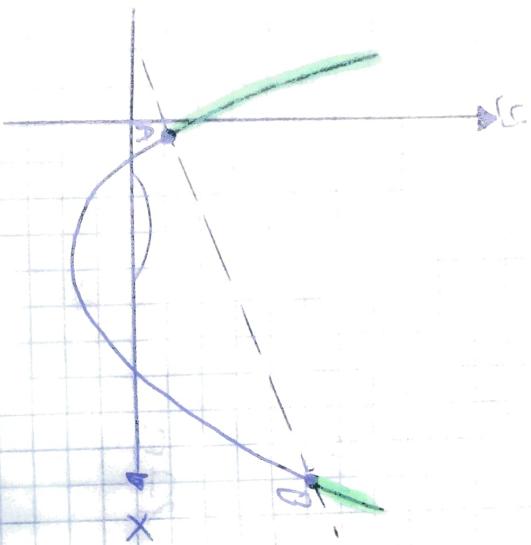
~~$$x^2 + 175x - 2500 = 0$$~~

~~$$x^2 + 175x - 2500 = 0$$~~

$$x = 25 - 16 = 9$$

= xy < 1 Pdn n GJU

gal = 1111210



$$y = x^2 - 5x + 6$$

$$y = (x-2)(x-3)$$

$$x \cdot (x-2) = 6$$

$$A(1, 2)$$

$$y = (5-2)(5-3)$$

$$3 \cdot 2 = 6$$

$$B(5, 6)$$

$$m + (x) = \frac{6-2}{5-x} = x$$

~~Wertetabelle~~

$$6 = 5 + b$$

$$b = 1$$

$$f(x) = x + 1$$

$$x < 2 \quad \text{Hc} \quad x > 5$$