

- #13 a) 5 et $\tan \theta = 3/4 \rightarrow 36,9^\circ$
 b) 4,47 et $\tan \theta = 2/4 \rightarrow 26,57^\circ \Rightarrow 180 - 26,57 = 153,4^\circ$
 c) 6,32 et $\tan \theta = 2/6 \rightarrow 18,43^\circ \Rightarrow 180 + 18,43 = 198,43^\circ$
 d) 5,83 et $\tan \theta = 5/3 \rightarrow 59,04^\circ \Rightarrow 360 - 59,04 = 300,96^\circ$

#19 b) $\|\vec{AD}\| = \sqrt{4^2 + 6^2 - 2 \cdot 4 \cdot 6 \cdot \cos 120^\circ} = 8,72$

21.

	Flèche		Vecteur		
	a) Origine	b) Extrémité	c) Composantes	d) Norme	e) Orientation
1)	(-2, 3)	(4, 5)	(6, 2)	$2\sqrt{10}$	$\approx 18,4^\circ$
2)	(2, -2)	(6, 1)	(4, 3)	5	$\approx 36,9^\circ$
3)	(0, -6)	(-2, -3)	(-2, 3)	$\sqrt{13}$	$\approx 123,7^\circ$
4)	(2, 1)	(5, 3)	(3, 2)	$\sqrt{13}$	$\approx 33,69^\circ$
5)	(0, 0)	(4, 2)	(4, 2)	$2\sqrt{5}$	$\approx 26,56^\circ$
6)	(3, 0)	(-3, $2\sqrt{3}$)	(-6, $2\sqrt{3}$)	6,928	$\approx 150^\circ$

#22 $\vec{v}_1 = (3, -1)$ $\vec{v}_2 = (-2, -3)$ $\vec{v}_3 = (-2, -1)$

a) $\vec{v}_1 + \vec{v}_2 = (1, -4)$ b) $(1, -2)$ c) $\vec{v}_2 - \vec{v}_3 = (0, -2)$

d) $\vec{v}_1 + \vec{v}_2 - \vec{v}_3 = (3, -3)$

e) $-\vec{v}_1 + (-\vec{v}_2) - (-\vec{v}_3)$

$-\vec{v}_1 - \vec{v}_2 + \vec{v}_3 \Rightarrow (-3, 1) - (-2, -3) + (-2, -1) = (-3, 3)$

#23 $\|a+b\| = \sqrt{100^2 + 175^2 - 2 \cdot 100 \cdot 175 \cdot \cos 40^\circ} = 117,53 \text{ cm}$

#24 Tous vrai sauf a)

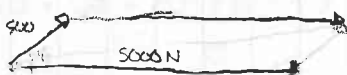
#27 a) b)



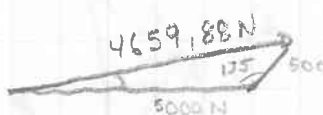
c) $\theta = 180^\circ - 30 = 150^\circ$

norme = $\sqrt{100^2 + 150^2 + 2 \cdot 100 \cdot 150 \cdot \cos 150^\circ} = 241,83$

XX #28



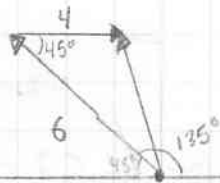
Norme = 4659,88 N



$\frac{\sin 135^\circ}{4659,88 \text{ N}} = \frac{\sin \theta}{500}$

$\theta = 4,35^\circ$

#29

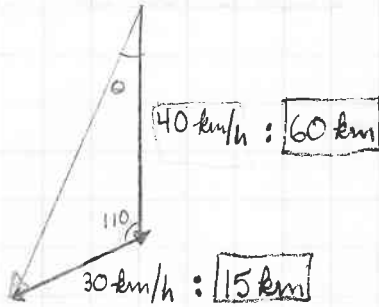


$$\text{Norme} : \sqrt{6^2 + 4^2 - 2 \cdot 6 \cdot 4 \cdot \cos 45^\circ}$$

$$= 4,24 \text{ km/h}$$

$$4,24 \div 2 \text{ pour } \frac{1}{2} \text{ heure} \approx 2,12 \text{ km}$$

#32



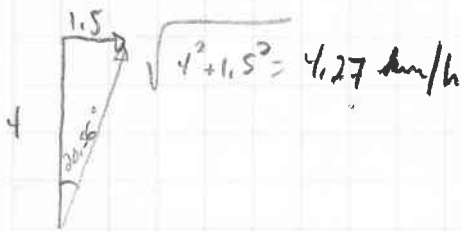
$$\text{Norme} : \sqrt{60^2 + 15^2 - 2 \cdot 60 \cdot 15 \cdot \cos 110}$$

$$= 66,63 \text{ km}$$

$$\text{directions} : \frac{66,63 \text{ km}}{\sin 110^\circ} = \frac{15 \text{ km}}{\sin \theta}$$

$$\theta = 12,21^\circ$$

#34 a)



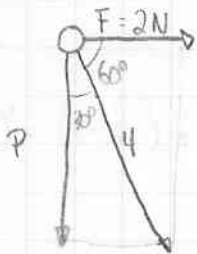
b)



$$\tan 69,44 = \frac{500}{x}$$

$$x = 187,5 \text{ m}$$

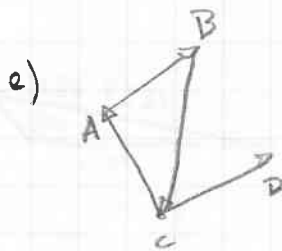
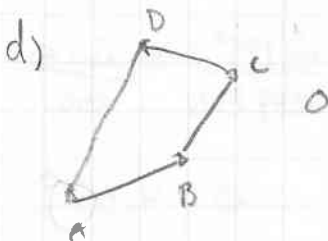
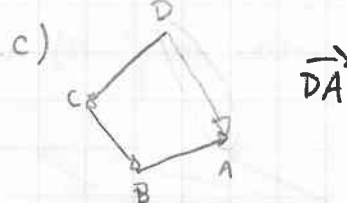
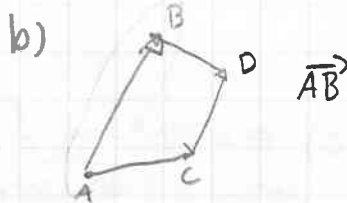
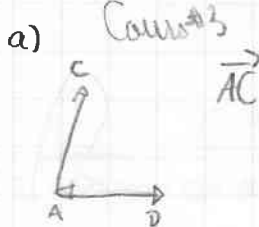
#35



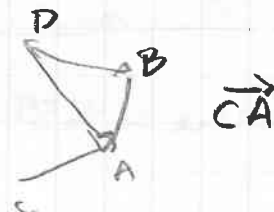
$$\text{Hyp} = 4 \text{ N } (\Delta 30-60-90)$$

$$P \Rightarrow \cos 30^\circ = \frac{P}{4} \Rightarrow P = 3,46 \text{ N}$$

#37



$$\vec{CD} \quad \text{Et } \vec{CA} + \vec{AB} + \vec{BD} + \vec{DA}$$



Cours #9

Manuel P. 202 no: 34-35-37

Manuel P. 204 no: 43

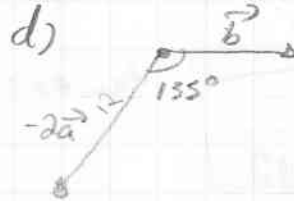
#43 a) NON

b) $\|2 \cdot \vec{b}\| = 12$

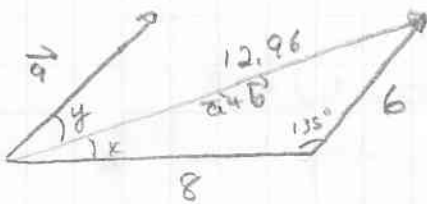
c)



loi cos: 12,96



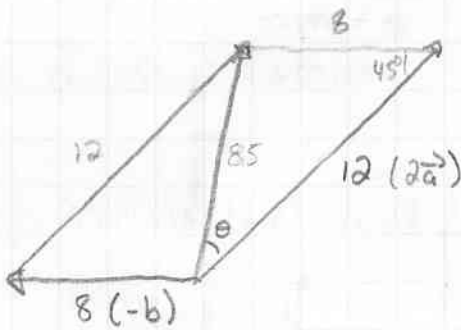
***e)



$\frac{\sin x}{6} = \frac{\sin 135}{12.96} \Rightarrow x = 19,10$

$y = 45^\circ - 19,10 = 25,9^\circ$

***f)

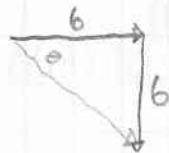


$\|2\vec{a} - \vec{b}\| \Rightarrow 8,5$ loi cos avec 45°

$\frac{\sin \theta}{8} = \frac{\sin 45^\circ}{8,5} \Rightarrow \theta = 41,7^\circ$

#44 a) $\vec{a} + 2\vec{b} \rightarrow 6,32$ et $71,6^\circ$

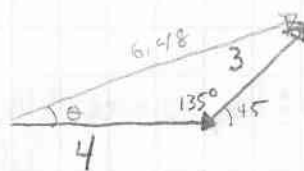
b) $3\vec{a} - 2\vec{b}$



norme: 8,5

$\theta \Rightarrow \tan \theta = \frac{6}{6} \Rightarrow \theta = 45^\circ \Rightarrow \text{angle} = 360^\circ - 45^\circ = 315^\circ$

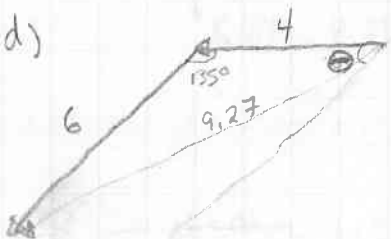
***c)



Norme: 6,48 (loi cos)

$\theta: \frac{\sin \theta}{3} = \frac{\sin 135^\circ}{6,48} \Rightarrow \theta = 19,1^\circ$

***d)



Norme: 9,27

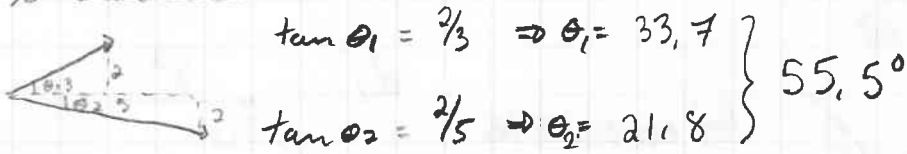
$\theta: \frac{\sin \theta}{6} = \frac{\sin 135^\circ}{9,27} \Rightarrow \theta = 27,24^\circ$

orientation $\Rightarrow 180^\circ + 27,24^\circ = 207,24^\circ$

#49 a) Project: $2.92 \cdot \cos 38^\circ = 2.3 \text{ cm}$
P.S. : $2.92 \cdot 5.5 \cdot \cos 38^\circ = 12.66$

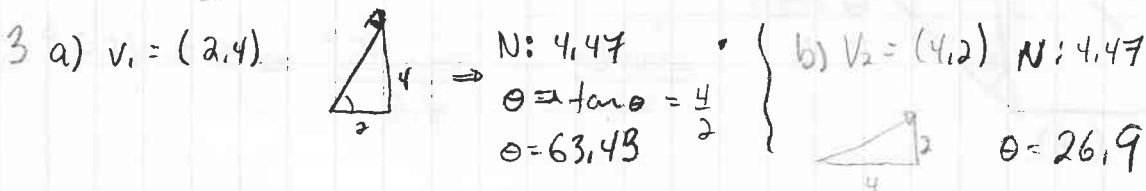
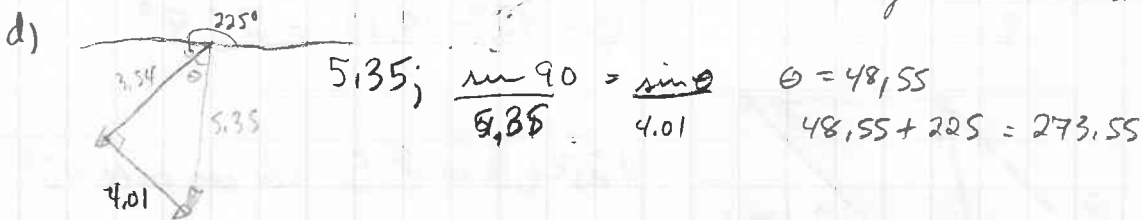
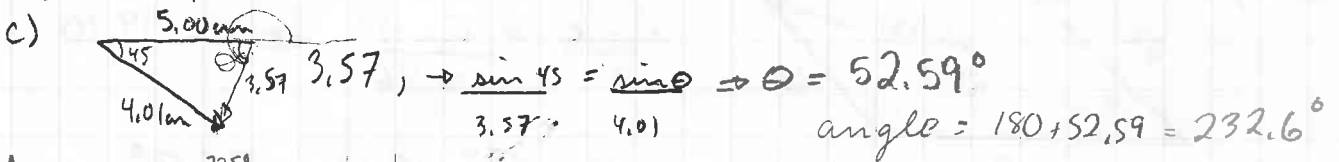
b) Project: $3.7 \cdot \cos 99.9 = -0.64$
P.S. : $3.7 \cdot 5.8 \cos 99.9 = -3.69$

#50 a) resultant



Capitule 7, 212

2a) $12.36, 0^\circ$ b) $0.57, 180^\circ$



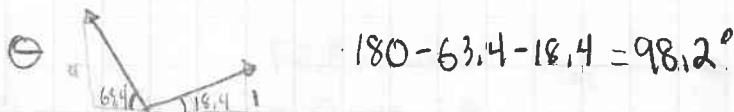
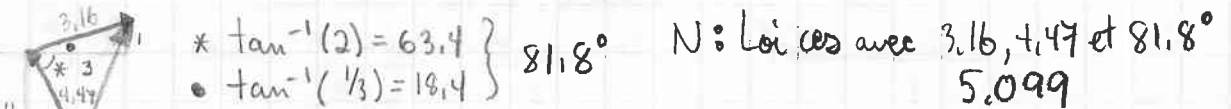
#5 : $\vec{u} = (-1, 4)$ $\vec{v} = (2, -3)$ et $\vec{w} = (-3, 1)$

a) $\vec{u} + \vec{v} \Rightarrow (1, 1)$ b) $2\vec{u} + 3\vec{w} = (-2, 8) + (-9, 3) = (-11, 11)$

c) $\vec{v} \cdot \vec{w} = -6 + -3 = -9$ d) $(\vec{u} \cdot \vec{v})\vec{w} = (-2 + -12) \cdot (-3, 1) = -14(-3, 1) = (42, -14)$

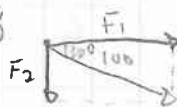
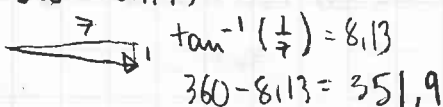
#6 $\vec{a} = (-2, 4)$ $\vec{b} = (3, 1)$

a)



#12 a) $\vec{w} = (-6, -2) + (3, 6) = (-3, 4) = 5$

b) $\vec{s} = (11, 7)$



$F_1 \Rightarrow \cos 30 = \frac{F_1}{100} \Rightarrow F_1 = 86.6$

$F_2 \Rightarrow \cos 60 = \frac{F_2}{100} \Rightarrow F_2 = 50$