

Name Hour\_

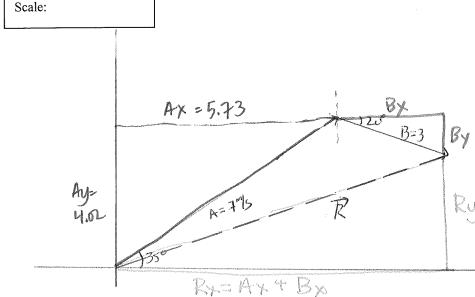


**Extra Example or Practice Problem:** 

A sparrow is flying at 7 m/s at 35° N of E, but then there is a wind blowing at 3 m/s at 20° S of E. Find the velocity of the sparrow. (the bird, not Jack Sparrow ©)

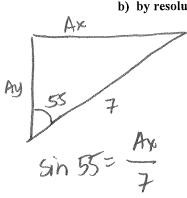
a) graphically.

R =	at	of	



Ry=My-By

b) by resolution into components.



Cos 55 = Ay 7 Ay=4.02

$$\sin 20^\circ = \frac{By}{3}$$
  
By = 1.03

$$Cos 20^{\circ} = \frac{Bx}{3}$$
 $Bx = 2.82$ 

$$R = 9.00 \text{ at } 9.30 \text{ Nof } E$$

R O	Cardinates managements in control of the cardinates of the cardina	= Ay = 4.02	By -1.0.
RXCAY+BX	population.	$Ry^2$	2.9
(5.73) + (2.	X>)		
D1 = 8.66			

magnitude:
R2=Rx2+Ry2
R2=8,552+ 2.992
R2 = 82
R=9.06 m

and the second s
(direction:)
$tan \theta = \frac{Ry}{Rx} = \frac{2.99}{8.55}$
tun 0=,3497
(A=19.30)

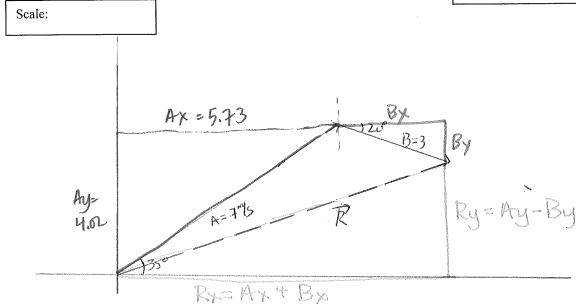


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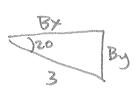
a) graphically.

R =	_ at	of	<u> </u>



b) by resolution into components.

	b	) by resolu
	Ax	
Pry	55/7	
	53/7	
	<i>y</i>	Ay
	Sin 55=	**************************************
		7
		•



$$Sin 20^{\circ} = \frac{84}{3}$$
 $By = 1.03$ 

$$\cos 20^{\circ} = \frac{Bx}{3}$$
 $Bx = 2.82$ 

$$R = 9.00\% \text{ at } 9.3\% \text{ of } E$$

= Ay-By

4.02-1.03

Ry=2.99

R	Ry
RX=AX+BX	
(5.73)+(2.8)	
Rx = 8,55	

magnitude:  

$$R^2 = Rx^2 + Ry^2$$
  
 $R^2 = 8.55^2 + 2.99^2$   
 $R^2 = 82$   
 $R = 9.06 \%$ 

direction: |  
tan 
$$\theta = \frac{Ry}{Rx} = \frac{2.99}{8.55}$$
  
tun  $\theta = .3497$   
 $\theta = 19.3^{\circ}$