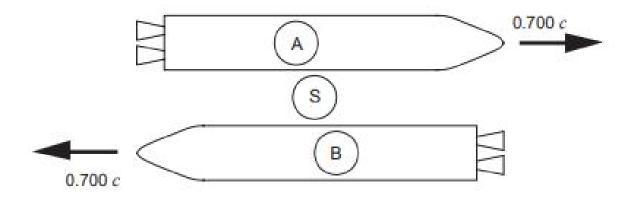
Question 14 (13 marks)



Two 5.00×10^2 m long identical spaceships, 'A' and 'B', pass by an observer S while moving in opposite directions. The observer S measures the velocity of spaceship A as 0.700 c and spaceship B as -0.700 c.

(a)	(i)	Calculate the veloc	city of A (in m s-1)	as measured by B.	(4 marks)
1-1	7.7			do moderno o , o.	1

Was also was an	
Answer:	m s

(ii)	Explain why the magnitude of the velocity of B as measured by A would be the same as your answer for part (a)(i), only in the opposite direction. (3 marks)						
	carrie as year anonor for part (a)(i), only in the appearing an estion.	(o mano,					

(b)	Calculate the duration of one second on A as measured by	y the observer S.	(3 marks)
	An	swer:	S
			76. 4 78
(c)	Calculate the length of B as measured by A. If you could repart (a)(i), use 0.870 c.	ot obtain an answe	(3 marks)
	Ans	wer:	m