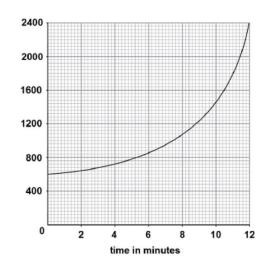
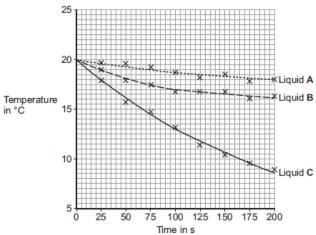
## **Graphical Interpretation Questions**

Calculate the rate of increase of power output at 10 minutes.

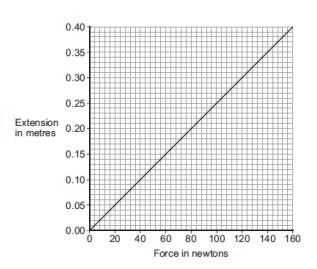
power output in MW



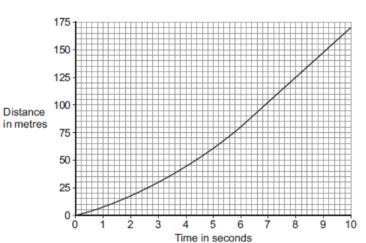
Calculate the average rate of temperature decrease of liquid C between 0 and 100 seconds.



The graph shows how the extension of a single spring from the chest expander depends on the force acting on the spring. Use data from the graph to calculate the spring constant of the spring. Give the unit.



The graph shows the distance-time graph for a car. Use the graph to calculate the maximum speed the car was travelling at.



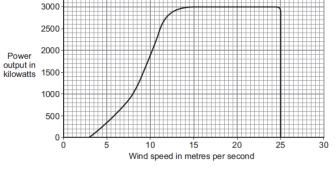
				Ó	1	0000	20	000	30 000		40 00
			0			Ш					$\blacksquare$
			3								#
			5								
			10								$\pm$
			40								
			15								+
		in °C									$\boxplus$
		increase									$\boxplus$
		Tempera									
	<del></del>		25								+
											$\boxplus$
			30								$\blacksquare$
	are specific fleat capacity of copper.		00								$\blacksquare$
	the specific heat capacity of copper.		35								$\blacksquare$
•	heated. Use the data in the graph to calculate		40								
7.	The graph shows a 2.0 kg copper block being		40								
						Ţ	ime in s	econds			
			0	10		20	30	4	40 5	0	60
	30 seconds and 60 seconds.										
	Describe the motion of the bus between	5	0	/							
		10	0								
	20 seconds and 30 seconds.	in metres									
	Describe the motion of the bus between	Distance									
	Describe the metion of the book to the	15	0								
		20									
	20 seconds?	20	0								
	How far has the bus travelled in the first										/
	Harristan han the horse transcribed to the Cont	25	0								
	journey is shown to the right.	0.5	0								
õ.	A bus is taking some children to school. The bus h	nas to stop	a few ti	mes.	. The o	distan	ce–tim	ne grap	oh for par	t of t	he
		_					Time	in seco	onds		
				Ō.	00 0.	02 0.			8 0.10 0	.12 (	0.14
		_		0.0							$\Box$
	, , , , , , , , , , , , , , , , , , , ,			0.0							
	c) Calculate the resistance of the bulb after 0.1s			0.5-							$\exists$
		-		1.0-							Ħ
				4.0							Ħ
		-		1.5							Ħ
	2, 25.00.000 the maximum power of the built.		amps	2.0							Ħ
	b) Calculate the maximum power of the bulb.		urrent								Ħ
		-		2.5							$\pm$
						$\parallel \Lambda$					Ħ
		-		3.0		X					Ħ
	110 1113t 0.023			0.0							$\pm$
		a3C3 111		35.							$\pm$
	a) Calculate the rate at which the current incre-	ases in		4.0							$\blacksquare$
	Dails is Switched Off.			4 N-			,				$\overline{}$
•	bulb is switched on.	Jappiy. 11	. ε δι αρι	5110	110	- v	- carre	0116	Pc2 a16		•
<b>5.</b>	a) Calculate the rate at which the current increating first 0.02s	,	ie grapi	4.0 · 3.5 ·	ows no	ow the	e curre	ent cna	inges atte	er tne	

Energy transferred to copper block in joules

				100000							
8.	The figure below shows how the number	er of nuclei in a		90000							
	sample of molybdenum-99 changes wit			80000							
	nuclei decay.			70000	$\sim$						
	Calculate the time for 80% of the Mo-9	9 nuclei in a		60000							
	sample to decay.	J Huciel III a	Number of		X						
	,		molybdenum-99 nuclei	50000							
				40000-							
				30000-							
				20000-							
				10000-							
9.	The graph shows how the velocity of a			0	1 2	3	4 5	6	7 8	9	
	during the first 40 seconds of a race. Use the graph to			Time in days							
	calculate the acceleration of the go-kar points J and K.	t between	1	5							
	points Tana K.										
			1 Valasitu	0							
			Velocity in metres								
	Use the graph to calculate the distance	the go-kart	per second	_ K							
	travels between points J and K.	J		5							
				J							
				ó	5 10	15	20	25	30	35	
						Tim	e in se	conds			
10.	The graphs show how the velocity of two cars, A and B, change from the		Car A					Car	B		
	moment the car drivers see an	15	Odi A		П	15		- Oui			
	obstacle blocking the road. One of										
	the car drivers has been drinking							N			
	alcohol. The other driver is wide	10	<del>\</del>			10		+			
	awake and alert.	Velocity			Veloci			1			
	Calculate the acceleration during	in m/s	<b>\</b>		in m/s	` <b> </b>					
	breaking.	5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			5-					
			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			Ħ			$\square \setminus$		
		0	2 3	4	5	0	1	2	3	4	
			Time in sec	conds				Time	in sec	onds	
Use	the graphs to calculate how much furth	er car B travels b	efore stoppin	g com	pared to	car A.					

1. The graph shows how wind speed affects the power output from a wind turbine. In one 4-hour period, the wind turbine transfers 5600 kilowatt-hours of electrical energy. Use the data in the graph to calculate the average wind speed during this 4-hour period.

average wind speed during this 4-hour period.



12. The graph shows how the severity of an electric shock depends on the size of the current and the time that the current flows through the body. Describe the data shown in the graph. Use the relationship Q = It 120 Danger of 100 serious injury 80 Time in milliseconds 60 40 Usually no serious injury 20 50 150 200 250 100 Current in milliamps 13. A driver is driving along a road at 30 m/s. The driver suddenly sees a large truck parked across the road and reacts to the situation by applying the brakes so that a constant braking force stops the car. The reaction time of the driver is 0.67 seconds, it then takes another 5 seconds for the brakes to bring the car to rest. Using the data above, draw a speed-time graph to show the speed of the car from the instant the truck was seen by the driver until the car stopped. Calculate the acceleration of the car whilst the brakes are applied. speed Calculate the stopping distance. (m/s)

time (s)