D. 4. A.	alvaia O	uiz N	Vame:				Total:	/24 m	narks [K/U	J]	
SPH4U0 Data At	nalysis Q	int digits	in each of t	he follo	wing mea	suremen	its:	11		[3]	
1. Give the number of significant digits in each of the following measurements:  a) 0.00065 g= b) 36 000 c) 1.250 mL [3]											
	1	1	wim ont one	determ	ine that 5	cycles o	of the pend	lulum occ	ur in a tin	ne of	
2. You are performin	g a pendi un decide	num expe	ar time mea	sureme	nt uncerta	inty is -	-/- 0.2 sec	onds and	that the ti	me	
		4 1: -: 4	a Vour la	narthe	rs begin i	Sauado	ic about u	ic signific	Julie argree		
number of cycles	s. One pa	artner say	s it has I s	gnificai	ii digit wi	ine your	Outer par	undi surj = =		[2]	
significant digits	. Who is	correct?	Please exp	lain.				40.4	1. 1		
1. 5	11/21		a cor	nt,	not a	Me	asver	reg a		entainte	
significant digits. Who is correct? Please explain.  5 cycles is a count not a measurement so it  white significant digits. All if the measurement wertainty  1. Do the following calculations, rounding off answers to the appropriate number of significant digits. Include  1. Do the following calculations, rounding off answers to the appropriate number of significant digits. Include  1. Do the following calculations, rounding off answers to the appropriate number of significant digits. Include  1. Do the following calculations, rounding off answers to the appropriate number of significant digits. Include  1. Do the following calculations, rounding off answers to the appropriate number of significant digits.											
and I	htimte	- 519hi	rt care o	700	c à H	H. 1	Tre me	wred	ert.		
a D d Cd wing	wild	one round	ling off ans	wers to	the appro	priate ni	umber of s	ignificant	t digits. In	nclude	
correct units in your answer.					[2]						
a) 13.0 cm x 1.425 cm x 22.6 cm=					b) 25.5 m + 12.85 m -3.125 m						
14	418.665 cm3					= 35,225 m					
≈ 419 cm 3 (to 35,50											
~	419 0	m	, , ,	20)						/ /	
4. Perform the following units conversions, expre					ssing your final answer in scientific notation if necessary.						
Show your work. 1/236005  a) 16.8 m/s=? km/h  b) 12				$25 \text{ mm}^3 = 2 \text{ cm}^3$ c) $85 \text{ km/h} = ? \text{ m/s}$							
a) $16.8 \text{ m/s} = ?$	km/n						85 km	14	1000m	_	
11 Sm 32005	1km		125 m	m3, -	1 cm <sup>3</sup>	,	os kn,	260°S	11cm		
16.8 m , 36005 x 5 1h x = 60.5 km/	1060M		1	_	1 pmm		^	201 ha	10		
- 60 5 Km/	(I		2 1.25	KID XI	o en			23.6 m			
			2 1.	25 × 10	ICM			24 ml			
5. Combine the me	easured v	alues belo	ow as show	n by the	given for	mula an	d determi	ne the abs	solute <u>abs</u> eswer	olute	
uncertainty in the f	inal valu	e. Includ	de the appro	priate r	number of	signific	ant digits	iii youi ai	15WC1.	[4]	
a) Density=	) D= r	nass/volu	me m	ass = 15	$.5 g \pm 0.2$	g v	olume = 2	$2.65 \text{ cm}^3 \pm$	$= 0.05 \text{ cm}^3$	3	
a) Delisity		nassi (cia					5 m/= 0	.29 x100/	DV12	2.15 ×100/.	
$D = \frac{m}{V \circ l} = \frac{1}{2}$	15.39	+/	SWY. JO	No1/1)		-	1. l.	5,59		2.13	
Vol	2,65 cm	ا کنر					= 1.	29%.	2	1.871.	
2584	19 91	13 ±	3.181.								
7.0	109	13+	0,2 9/	(M							
		cm -	T . T . T	Т	- 1 6± 0 1	cm I	<sub>2</sub> =12.9 +	0.2 cm	$L_3 = 7.4$	± .1 cm	
b) Perimeter = ? Perimeter = $L_1 + L_2 + L_3 + L_1 + L_2 + L_3 +$											
Per = 46-	+ 12.9 -	17.4 =	1 (0,1+	02101	)c=~		•				
, -											
2 24	9 =	0.4	CM								
					:	a tha xiai	riation of 6	electric fie	eld intensi	ity (E)	
6. The table below with distance (D) fr	ala arriga th	e result of	f an experii	nent to	investigat Inshin on 1	the grap	h paper pr	ovided.	ord miterio	[3]	
with distance (D) II	snows un	nt abarra			nomp on						
With dibtalies (2)	om a poi	nt charge	. Grapii iii								
	om a poi	nt charge		0.50	0.60	0.70	0.80	0.90	1.00		
Distance (m)	0.20	nt charge	0.40	0.50	0.60	0.70	0.80	0.90			
Distance (m)  Electric Field	om a poi	nt charge	0.40						9.0		
Distance (m)  Electric Field Intensity (N/C)	0.20 225.0	0.30 100.0	56.0	0.50 36.0	25.0	0.70	0.80	0.90	9.0		
Distance (m)  Electric Field Intensity (N/C)	0.20 225.0	0.30 100.0	56.0	36.0	0.60 25.0	0.70 18.4	0.80 14.1	0.90 11.1	9.0	no la	
Distance (m)  Electric Field Intensity (N/C)	0.20 225.0	0.30 100.0	56.0	36.0	0.60 25.0	0.70 18.4	0.80 14.1	0.90 11.1	9.0	non linear	
Distance (m)  Electric Field Intensity (N/C)	0.20 225.0	0.30 100.0	56.0	36.0	0.60 25.0	0.70 18.4	0.80 14.1	0.90 11.1	9.0	non linear	
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Distance (m)  Electric Field Intensity (N/C)	0.20 225.0	0.30 100.0	56.0	36.0	0.60 25.0	0.70 18.4	0.80 14.1	0.90 11.1	9.0	nonlinear Heat	
Distance (m)  Electric Field Intensity (N/C)  Which of the follow  y independent of no relationship  y  x	225.0  wing genex  y x x linear  y 1	0.30 100.0 eral relati	0.40 56.0 onships beautiful of the second of	0.50 36.0 st descri	0.60  25.0  be this gray of 1/x", n>0 inverse	0.70  18.4  aph? Ex	14.1  aplain your  converse  a st  converse  a st  converse  conve	0.90  11.1  rehoice.  Here decrapid asymmetric asymmetr	9.0 [1] graph is line to lection up to the	monlinear  lowed  their  elly  for the	
Distance (m)  Electric Field Intensity (N/C)  Which of the follow y independent of no relationship y  Describe the full mathem	225.0  ving general services in partical re-	0.30 100.0 eral relati	0.40 56.0  onships beautiful analy that described the second analysis and the	0.50  36.0  st descri  ¬√x, n>1  root  sis proceibes this	0.60  25.0  be this gray a 1/x", n>0  y a 1/x", n>0	0.70  18.4  aph? Ex  out	14.1  splain your  construction of the second secon	11.1  rehoice.  Heep dee  rapid a  some fixe	9.0 [1]  Tophis  Line to  Lection  Aptobles  A	non linear  llowed  theat  fly,  for the	
Distance (m)  Electric Field Intensity (N/C)  Which of the follow y independent of no relationship y  Describe the full mathem	225.0  ving general services in partical re-	0.30 100.0 eral relati	0.40 56.0  onships beautiful analy that described the second analysis and the	0.50  36.0  st descri  ¬√x, n>1  root  sis proceibes this	0.60  25.0  be this gray a 1/x", n>0  y a 1/x", n>0	0.70  18.4  aph? Ex  out	14.1  splain your  construction of the second secon	11.1  rehoice.  Heep dee  rapid a  some fixe	9.0 [1]  Tophis  Line to  Lection  Aptobles  A	non linear  llowed  that  lly,  for the  [3]	
Distance (m)  Electric Field Intensity (N/C)  Which of the follow y independent of no relationship y  Describe th full mathem	225.0  ving general strength of the steps in the step in t	0.30 100.0 eral relati	0.40 56.0  onships beautiful analy that descriptions of the state of t	0.50 36.0  st descri  ¬√x, n>1  root  sis proceibes this	0.60  25.0  be this gray a 1/x", n>0 inverse x  ess you we graph.	0.70  18.4  aph? Ex  out	14.1  splain your  La st  to determ	11.1  rehoice.  - He consider asymmetric the experience of the exp	9.0 [1]  Figh is  line to  plection  up to true  up to	It will appear	
Distance (m)  Electric Field Intensity (N/C)  Which of the follow y independent of no relationship y  Describe the full mathem	225.0  ving general strength of the steps in the step in t	0.30 100.0 eral relati	0.40 56.0  onships beautiful analy that descriptions of the state of t	0.50 36.0  st descri  ¬√x, n>1  root  sis proceibes this	0.60  25.0  be this gray a 1/x", n>0 inverse x  ess you we graph.	0.70  18.4  aph? Ex  out	14.1  splain your  La st  to determ	11.1  rehoice.  - He consider asymmetric the experience of the exp	9.0 [1]  Figh is  line to  plection  up to true  up to	It will appear	