Student Number:	Class Teacher:
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St George Girls High School

Trial Higher School Certificate Examination

2017



Mathematics Extension 1

General Instructions

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- Reading time 5 minutes
- Working time 2 hours
- Write using black pen
- Board-approved calculators may be used
- A reference sheet is provided
- In Questions 11 15, show relevant mathematical reasoning and/or calculations

Section I	/10
Section II	
Question 11	/12
Question 12	/12
Question 13	/12
Question 14	/12
Question 15	/12
Total	/70

Total Marks - 70

Section 1

Pages 3 - 6

10 marks

- Attempt Questions 1 10
- Allow about 15 minutes for this section
- Answer on the multiple choice answer sheet provided at the back of this paper

Section II

Pages 7 - 11

60 marks

- Attempt Questions 11 15
- Allow about 1 hour and 45 minutes for this section
- Begin each question in a new writing booklet

Students are advised that this is a Trial Examination only and does not necessarily reflect the content or format of the Higher School Certificate Examination.

Section I

10 marks

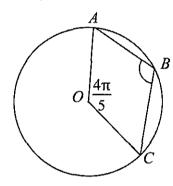
Attempt Questions 1 – 10

Allow about 15 minutes for this section

Use the multiple-choice answer sheet for Questions 1-10

1 The points A, B and C lie on a circle with centre O, as shown in the diagram.

The size of $\angle AOC$ is $\frac{4\pi}{5}$ radians.



Not to scale

What is the size of $\angle ABC$ in radians?

- $(A) \quad \frac{3\pi}{10}$
- (B) $\frac{\pi}{2}$
- (C) $\frac{3\pi}{5}$
- (D) $\frac{4\pi}{5}$
- 2 Which of the following is the exact value of $\int_{\frac{3}{\sqrt{2}}}^{3} \frac{4 \ dx}{\sqrt{9-x^2}}?$
 - (A) $-\pi$
 - (B) $-\frac{\pi}{4}$
 - (C) $\frac{\pi}{4}$
 - (D) π

- 3 What are the coordinates of the point that divides the interval joining P(2, 1) and Q(2, 8) internally in the ratio 3: 4?
 - (A) (1,7)
 - (B) (2,4)
 - (C) (2,7)
 - (D) (4, 2)
- 4 An oil slick is in the shape of a circle. Its surface area is increasing at a rate of $10 m^2/s$. Let r metres be the radius of the oil slick in t seconds.

The rate of increase of r in m/s, is given by

- (A) $\frac{5}{\pi r}$
- (B) $\frac{20}{\pi r}$
- (C) $\frac{10}{\pi r^2}$
- (D) $\frac{1}{20\pi r}$

5 Let
$$f(x) = \frac{2}{x-3} + 1$$
.

The equations of the asymptotes of the graph of the inverse function $f^{-1}(x)$ are

- (A) x = 1 and y = 3
- (B) x = 1 and y = -3
- (C) x = 3 and y = 1
- (D) x = -3 and y = -1

A particle moves in a straight line such that it's displacement from the origin is x metres.

The velocity of the particle at any point is given by $v = 2x^2 - 3$ m/s.

Find the acceleration of the particle when it is 2 units to the right of the origin.

- (A) $-\frac{2}{3}$ m/s²
- (B) 5 m/s^2
- (C) 8 m/s^2
- (D) 40 m/s^2
- 7 The function $f(x) = \sin x \frac{2x}{3}$ has a real root close to x = 1.5.

Let x = 1.5 be a first approximation to the root.

What is the second approximation to the root using Newton's method?

- (A) 1.495
- (B) 1.496
- (C) 1.503
- (D) 1.504
- 8 If $\sqrt{3} \tan x = -1$ which expression gives all the possible values of x, where n is an integer?
 - (A) $x = 2n \pi \pm \frac{\pi}{6}$
 - (B) $x = n \pi \frac{5\pi}{6}$
 - (C) $x = n\pi + \frac{\pi}{6}$
 - (D) $x = n \pi \frac{\pi}{6}$

- 9 What is the domain and range of of $y = 3 \sin^{-1}(2x)$?
 - (A) Domain: $-\frac{1}{2} \le x \le \frac{1}{2}$. Range $-\frac{1}{3} \le y \le \frac{1}{3}$
 - (B) Domain: $-2 \le x \le 2$. Range $-\frac{1}{3} \le y \le \frac{1}{3}$
 - (C) Domain: $-\frac{1}{2} \le x \le \frac{1}{2}$. Range $-\frac{3\pi}{2} \le y \le \frac{3\pi}{2}$
 - (D) Domain: $-2 \le x \le 2$. Range $-\frac{3\pi}{2} \le y \le \frac{3\pi}{2}$
- 10 The roots of $2x^3 6x^2 8x + 12 = 0$ are α , β and γ .

What is the value of $(\alpha + 2)(\beta + 2)(\gamma + 2)$?

- (A) -12
- (B) –6
- (C) 6
- (D) 12

End of Section I

Section II

60 marks

Attempt Questions 11 – 15

Allow about 1 hour and 45 minutes for this section

Answer each question in the appropriate writing booklet.

Your responses should include relevant mathematical reasoning and/or calculations.

Que	stion 11 (12 marks) Use a separate writing booklet	Marks
(a)	Find the size of the acute angle between the lines $x-y-4=0$ and $3x-y+4=0$. Answer to the nearest degree.	2
(b)	Differentiate $y = \log_e(\sin^{-1}x)$	2
(c)	Find $\int \frac{1}{9+x^2} dx$	2
(d)	Evaluate $\lim_{x\to 0} \frac{3x}{\sin 2x}$	2
(e)	Show that $(x + 3)$ is a factor of $x^3 - 3x^2 - 10x + 24$ and hence factorise $x^3 - 3x^2 - 10x + 24$ fully.	4

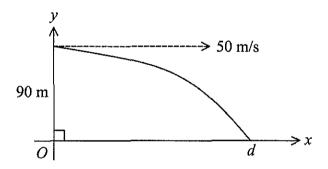
Question 12 (12 marks) Use a separate writing booklet

Marks

2

2

- (a) Evaluate $\int_{-1}^{0} x\sqrt{1+x} dx$, using the substitution u = 1 + x
- (b) Solve the inequality $\frac{2x}{x-1} \ge 1$
- (c) Find the exact value of $\sin(2 \tan^{-1} \frac{1}{2})$
- (d) The diagram below shows the trajectory of a ball thrown horizontally, at a speed of 50 ms⁻¹, from the top of a tower 90 metres above ground level.



The ball strikes the ground d metres from the base of the tower.

(i) Show that the equations describing the trajectory of the ball are:

$$x = 50t$$
 and $y = 90 - \frac{1}{2}gt^2$

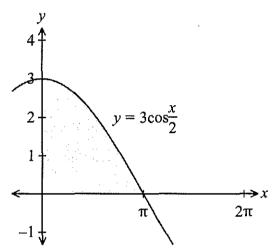
where g is the acceleration due to gravity and t is the time in seconds.

- (ii) Prove that the ball strikes the ground at time $t = 6\sqrt{\frac{5}{g}}$ seconds.
- (iii) How far from the base of the tower does the ball strike the ground?

Question 13 (12 marks) Use a separate writing booklet

Marks

- (a) (i) Express $\sqrt{3}\sin t + \cos t$ in the form $R\sin(t+\alpha)$ where α is in radians, and $0 \le \alpha \le \frac{\pi}{2}$
 - (ii) Hence, or otherwise, find the solutions of the equation $\sqrt{3}\sin t + \cos t = \sqrt{3} \text{ for } 0 \le t \le 2\pi$
- (b) The region bounded by the graph and the x-axis between and is rotated about the x-axis to form a solid



Find the exact volume of the solid.

- Newton's law of cooling states that when an object at temperature $T^{\circ}C$ is placed in an environment at temperature $T_0^{\circ}C$, the rate of the temperature loss is given by the equation $\frac{dT}{dt} = -k(T T_0)$ where t is the time in minutes and k is a positive constant.
 - (i) Show that $T = T_0 + Ae^{-kt}$ satisfies the above equation.
 - (ii) An object whose initial temperature is 60°C is placed in a room in which the internal temperature is maintained at 12°C.
 After 25 minutes, the temperature of the object is 30°C.
 How long will it take for the object's temperature to reduce to 15°C?

Question 14 (12 marks) Use a separate writing booklet

Marks

- $P(2at, at^2)$ is any point on the parabola $x^2 = 4ay$. The line d is parallel to (a) the tangent at P and passes through the focus S of the parabola.
 - Show the equation of the tangent at P is $y = tx at^2$ (i)

1

(ii) Find the equation of the line d. 1

(iii) The line d intersects the x-axis at the point R. Find the coordinates of the midpoint, M, of the interval RS.

2

(iv) Find the equation of the locus of M.

1

(b)

Simplify $\cos(2\cos^{-1}x)$ and hence evaluate $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \cos(2\cos^{-1}x) dx$. 2

(c) A particle is moving in a straight line performing Simple Harmonic Motion.

At time t seconds it has a displacement x metres from a fixed point O on the line given by

$$x = 1 + 2\cos(2t - \frac{\pi}{3})$$

Show that $\ddot{x} = -4(x-1)$ (i)

1

(ii) Find the centre of the motion and the time taken for the particle to first reach maximum speed.

2

Find the first time the particle is at rest and the amplitude of (iii) the motion

2

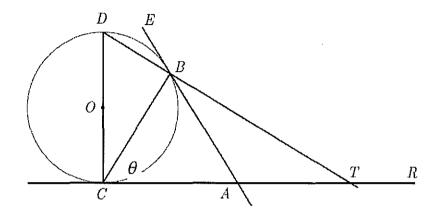
Question 15 (12 marks) Use a separate writing booklet

Marks

(a) Use Mathematical Induction to show that $5^n > 4^n + 3^n$ for all integers $n \ge 3$

3

(b)



In the diagram, CD is the diameter of the circle, centre O, and CR is a tangent to the circle C.

The line DT intersects the circle at B and CR at T.

The tangent to the circle at B intersects CR at A and $\angle BCA = \theta$.

Copy this diagram into your examination booklet.

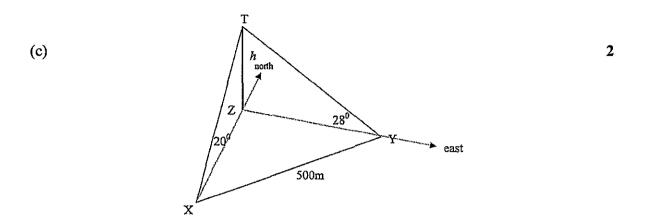
(i) Prove that
$$\angle ABT = \frac{\pi}{2} - \theta$$
.

2

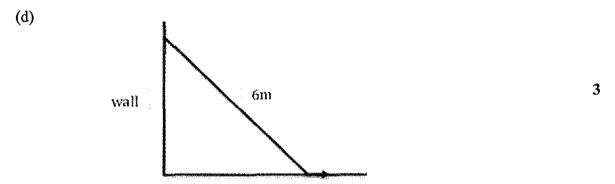
2

(ii) Prove that AC = AT

Question 15 continued



A person observes the angle of elevation of the top of a tree, which is h metres tall, from two positions. From a ponit X, due south of the tree, it is 20° and from the point Y, due east of the tree, it is 28° . The distance XY is 500m.



A ladder 6 metres long has its upper end against a vertical wall and its lower end on the horizontal floor.

The ladder is initially parallel to the wall, with the lower end at the origin.

The lower end moves away from the wall at a constant speed of 2m/s. Find the speed at which the upper end moves down the wall two seconds after the lower end has left the wall.

End of paper

MATHEMATICS EXTENSION I - QUESTION 2017 Hathe	matics Ext	ensian 1
Multiple Choice. SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
The points A, B and C lie on a circle with centre O, as shown in the diagram.		
The size of $\angle AOC$ is $\frac{4\pi}{5}$ radians.		
·		
B		
$O(\frac{4\pi}{5})$ Not to scale		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
What is the size of ∠ABC in radians?		
reflex angle (AOC = 2T - 4T		
= 100 40		
= 101 41		
= 6 TT		
LABC = 2 x 6 T		
-		
- 3T Answer C.		-1(111001111001111001111001111001111001111001111
3	A LONG TO THE PARTY OF THE PART	
2. (4 dx		
$\int \frac{4 dx}{\sqrt{q_{-}\chi^{2}}}$		
3		
V2		
= C 4 dx		
$\sqrt{3^2-\chi^2}$		
3		
$= 4 \left[\sin^{-1}\left(\frac{2\zeta}{3}\right) \right]$		
73		
= $4 \left[s_{1} n^{-1} \left(\frac{3}{3} \right) - s_{1} n^{-1} \left(\frac{3}{\sqrt{2}} \div 3 \right) \right]$		
$= 4 \left \sin^{-1}\left(\frac{3}{3}\right) - \sin^{-1}\left(\sqrt{2} + 3\right) \right $		
= 4 (SIn-11 - SIn-1 (V3)]		
> 4 [互-耳]		
= T Answer D.		

SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
3. $P(2,1)$ $Q(2,8)$		
3 : 4		
4(1) + 3(2) 4(1) + 3(4)		
= [3+4 , 3+4]		
$= \left(\frac{9+6}{7}, \frac{4+24}{7}\right)$		
= (2, 4) Answer B.		
		, ,
$A = \Pi C^2$		
dA 2TT dr =	••••••••••••••••••••••••••••••••••••	
da da dr dr dr dr		
dt = dr dt		
10 = 2Tr. dr		
$\frac{10}{2\pi r} = \frac{dr}{df}$		
attr = dt		
dr = Tr.	countries and the contribution of the contribu	
+ (x) 1143		
5. $f(x) = \frac{2}{x-3}$ 41 has $x = \frac{3}{3}$ as asymptote	5	
, y - 1		
:. the inverse has asymptotes y=3 & x=1		
Α		
Answer A.		

MATHEMATICS EXTENSION I – QUESTION		
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
$6. a = \frac{d}{dz} \frac{1}{2} v^2$		
$= \frac{d}{dx} \left[2x^2 - 3 \right]^2$		W 9 W 1971
$= \frac{0}{01} \left[\frac{4x^4 - 12x^2 + 9}{2} \right]$		
= d () 24 - 6x2 + 4.5]		
$= 8x^3 - 1\lambda \times 1$		
when $x = 2$ $a = 8(2)^3 - 12(2)$	mon made and a second control of the second	
= 64-24		
= 40.mls2 Answer D.	inited Association of the Control of	
7. $f(x) = \sin x - 2x$ $f'(x) = \cos x - 2$ 3 Formula sheetsays		
$f'(n) = \cos x - 2$ formula sheetsays		
$f(1.5) = sin(1.5) - \frac{2x_1-5}{3}$ $f'(x_1)$		
= 511(1.5) - 1		
$f'(1.5) = \cos(1.5) - \frac{2}{3}$ $x_1 = 1.5$		
$\frac{1}{2} = \frac{x_1 - f(x_1)}{f'(x_1)}$		
= 1.5 - [[(1.7) - 1]		
Cos 1.5 - 2/3		
= 1.496 (3 dp). Answer B.		
8) $\sqrt{3}$ $\tan x = -1$ $\cos \pi$ $\tan \pi = \frac{1}{\sqrt{3}}$		
tan x = - 13 tormula sheet says		
$i. \ \alpha = n \pi + tan^{-1} \left(-\frac{1}{\sqrt{3}}\right) \qquad \theta = n \pi + tan^{-1} 2.$		
= nT - I Answer D.		

SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
9. y= 3512 (2x)		
Backg round		Control of the Contro
14 y= 310-20 -1 500 51		
- <u>F</u> < y < <u>F</u>		
15 y = 3 s 1 n (22) -1 < 2 x < 1		
y = 511 (22) -1 5 2 5 1/2		
3		
3		
-3 T 4 4 3 T 2.		
Answer C.		
TASWET C.		
). $2x^3 - 6x^2 - 8x + 12 = 0$. $q=2$ $6x-6$ $c=-8$ $d=12$		
$\angle + B + V = -\frac{b}{a}$ $2 + b + V = \frac{6}{2} = 3$		
∠B + ∠8 + B8 = C ∠B+ 668+ B6 = = 2 = -4		
$\angle BX = -\frac{12}{9} = -6.$		
(d+2)(B+2)(Y+2)		
= (x+2) (B8 + 2B + 28 + 4)		
= 288 + 228 + 228 + tx+ 288 + 48 + 48 +8		
= LB8 +2 (LB + X8 + B8) +4 (1 +B+8) +8		
= -6 + 2(-4) + 4(3) + 9		
= -6 - 8 + 12 + 8		
= ~14+20		
= 6. Answer C.		

TRIAL EXAM- MATHEMATICS EXTENSION 1 ~ QUESTION			
SUGGESTED SOLUTIONS	MARKS MARKER'S COMMENTS		
(a) $x-y-4=0$ $3x-y+$	-4=0 2 provides correct		
$4 = x - 4 \qquad 4 = 3$	1		
$\frac{\partial y}{\partial x} = 1$ $\frac{\partial y}{\partial x} = \frac{1}{2}$	3 (1) finds gradient		
$m_1 = 1$ $m_2 = 1$	= 3 of the lines or		
	shows some understanding.		
tan 0 = m1 - m2 (No	ore correct fimula)		
1+m1m2	vrong formula, no marks!		
= -3			
1+(1)(3)			
= =			
tan0 = 1			
0=26.56505118			
-:.0=27°			
(b) y= In (sin-1 x)	2 provides		
$\frac{dy}{dx} = \frac{1}{\sin^{-1}x} \times \frac{1}{\sqrt{1-x^2}}$	solution		
oht Sin X VI-X2	(1) demonstrates		
= 1 Sin 1x 11-x=	understanding of differentiating a		
Sin X VI-X2	109, ie 1 x f'(x)		
· Correct rule on	where $f(x) = \sin^{-1}x$		
Reference sheet!	and $f'(x) = \sqrt{1-x^2}$		

SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMEN
(c) (1 9+x2 ch	2	provides
		correct
$= \int_{3^2 + \chi^2} d\chi$		Solution
	04	rz out the
$=\frac{1}{3}+an^{-1}\times +C$		Sc tan 3 +
9		
correct rule on Reference shee	学! 	
(d) lim 30c 000 sin20c	(2)	provides
x>0 sin2x		provides correct solution
= 2 1: 9ar		300011011
= 3 lim 2x		demonstrates
	 	progress towards
Since		onswer
7 lim sinx	<u> </u>	
= 3		

TRIAL EXAM- MATHEMATICS EXTENSION 1 – QUESTION				
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS		
(e) let $P(x) = x^3 - 3x^2 - 10x + 2$	4			
P(-3) = (-3)3-3(-3)2-10(-3) +	4			
= -27-27 +30 +24				
= 0				
Since $P(-3)=0$ then $(x+3)$ is		11		
a factor of P(x).	O '	Br show that " lith working.		
$\frac{\chi^2 - 6\chi + 8 - 0}{}$	or eq	uivalent		
$(x+3)x^3-3x^2-10x+24$				
$-x^3 + 3x^2$				
$-6x^2-i0x$				
$-6x^2 - 18x $				
8x +24	, ,			
8× +a+				
O.				
$\therefore P(x) = (x+3)(x^2-6x+8)$				
=(x+3)(x-4)(x-2)				
0 0	or ea	ch factor		
· If the question says "show	that	, then it		
is asking you to completely ju	ļ			
answer by showing every step				

SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
or (e)		
let $P(x) = x^3 - 3x^2 - 10x + 2$	4	
$x^2 - 6x + 8 - ($	1) or	equivalent
$(x+3)x^3 - 3x^2 - 10x + 24$		
$-\alpha^3 + 3\alpha^2$		
-6x2-10文		
-6x2-18x V		
8x +24		
8x + 24		
O .		
Since there is a zero remaina	der.	
then (12+3) is a factor of PC		1 Br show
· · · · · · · · · · · · · · · · · · ·		that " with
$P(x) = (x+3)(x^2-6x+8)$		Working
=(x+3)(x-4)(x-2)		
① ①	for e	ach factor.
	ŀ	

MATHEMATICS EXTENSION I – QUESTION 12		
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
a) co u=1+x		
) x J + x d x = (u-1) Ju du .: x= u-1	1 fo	correct substitution
$\frac{1}{6}$	Ifor	correct limits
doc=du	and a second of the second of	of indegration
= \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	- Name and April of the state o	well and the second
	The Common of th	Secretary and the Assessment of the Company of the
$= \begin{bmatrix} 2 & \frac{5}{2} & \frac{3}{2} & \frac{7}{2} \end{bmatrix}$	Market May and the Market Andrews as a second of the content of th	
5 5	en ser e e en seu en 18 de l'Alle de Maintenante de l'Alle e en 18	
2 2	man summer of declarations of the summer	- William and the William and the Control of the Co
	and granting representation of the security of	manga a sanga (Magasi Magasi Magasi Angasi na manga kangan sa manga kangan sa kangan sa kangan sa kangan sa pa
	- Marie - co-consiste entire entre de la constitución de la constitución de la constitución de la constitución	
	Section of the sectio	added 7 (3 Marting 2) - or given (4) Addition of the Addition
b) $2x \ge 1$ $x \ne 1$	W. St. March Will Michael Laboratory and	A MATERIAL PROPERTY AND A STATE OF THE PROPERTY AND A STAT
	A CONTRACTOR OF THE PROPERTY O	THE PROPERTY OF THE PROPERTY O
$(2-1)^2 \frac{2\kappa}{2} \ge (2-1)^2$	1	
$\frac{1}{x^{-1}}$ = $\frac{1}{x^{-1}}$	THE PERSON NAMED IN COLUMN TO PERSON ASSESSMENT OF THE PERSON ASSESSMEN	A STATE OF THE PARTY OF THE PAR
$\frac{2\times(\times^{-1})}{2\times(\times^{-1})^2}$. amen a analog (- memberapa para amana ang des (et ter da va	The state of the s
$2x(x-1) - (x-1)^2 \ge 0$	The state of the s	
$(x-1)$ $[2x-(x-1)] \ge 0$	ikake mai 1-01-belomanove Melonika	
(x-1)(x+1) > 0	LINEAR VANDOR	
	naroka (na. 1911 - 1914) ili napa angkampani Mi	Recognising that
Sketch y= (x-1)(x+1)	and the second s	x # 1 was an
	1	integral part
:1 <x, x="">1</x,>	housest house the first the second state of th	of this question
		you could not
	ances and a super a man before the company of the policy o	Mark without in
		1. (01.) 011.1001 14

MATHEMATICS EXTENSION I - QUESTION 12		-	
SUGGESTED SOLUTIONS		MARKS	MARKER'S COMMENTS
e) $3\ln(2\tan^{-1}\frac{1}{2})$ let $4 = \tan^{-1}\frac{1}{2}$ $3 = \tan^{-1}\frac{1}{2}$ $3 = \tan^{-1}\frac{1}{2}$ $3 = \tan^{-1}\frac{1}{2}$	1 TO THE LOCATION OF THE LOCAT		
$\therefore +qnd=\frac{1}{2}$	THE MET AND REAL PROPERTY OF THE PROPERTY OF T	and a second sec	THE PART OF THE SECOND PROPERTY OF THE PROPERTY OF THE PARTY OF THE PA
$\frac{\sin(2+\cos^{-1}z)}{=\sin 2z}$ $= \frac{2\sin 2z}{2}$	e frie authorization i magazini ferre destablishment de en a magazini ferre de a magazini ferre de a magazini ferre de la magazini ferr		A series of the contract of the parties of the part
= 2× = 2 = 4 5		(c)	
5			
$\vec{a}) i \ddot{x} = 0$		The second and the se	Note that
$\dot{x} = \int O dt$ $= C,$		or who property to the state of	your working
when 620, si =50		m, do an apply debted any of the destroyage and a stabled st	at x=0 and the constant
50 = C, ∴ \(\hat{\pi} = \\$0\)			of integration
$x = \int 50 db$		TO SEE SEE SEE SEE SEE SEE SEE SEE SEE SE	calculated
= 50 t + C2		1 Marie 1 Mari	at each side p.
$0 = 50(0) + C_2$	Anna magangan mana Pabalah da	and the same of th	And a Market Metroscophile has been to all an analysis and had a control of the second specific and th
C ₂ = 0			
x = Sot	entropologica (na series de la composition della	and the second s	A the contract of the contract
$\frac{\ddot{y} = -9}{\ddot{y} = -9} dt$			
= -9t+C3 when t=0, j=0		A THE STATE OF THE	
0 = -9(0) + (3)			

MATHEMATICS EXTENSION I – QUESTION 17		
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
∴ 63=0		
:: G=0 :: y=-9t		Manufacture consistence and manufacture of the state of t
	II het hij Mennessen fil de samme 1777 1880	
$y = \frac{1}{2} - \frac{9}{1} = \frac{1}{2}$	references as a second of the contract of the first of the contract of the first of	
= - 296.704	dal suumus on syn III täädid Mahaagayi/lasdelus	A co. at Verific to Augusty 15 of Commenced Children Laborators 1, as between the commenced in the contract of
: 90 = 1 - 60 2 + 61	,010-0- V	
: Cu =90	r Priest part participation of the second	
$-1 \cdot 4 = -\frac{1}{2} \circ t^2 + 90$	W-0.2.7.11.2.2	Annual form the design of the second and the second and the second second and the second seco
$y = \int -9t dt$ $= -\frac{1}{2}9t^{2} + C4$ when $t = 0$, $y = 90$ $\therefore 90 = -\frac{1}{2}9(0)^{2} + C4$ $\therefore C4 = 90$ $\therefore y = -\frac{1}{2}9t^{2} + 90$ $= 90 - \frac{1}{2}9b^{2}$	· A constitutive per experience and the per con-	
	N-MILITERAL COURSE OF A SERVICE SHOW A PERSON	
ii The ball strikes the ground when	emmanings and a payoff of the first the same of the sa	The second control of the second and deleterate and deleterate and the second and
<u> </u>	Market . programmer MA . grygg MA i Plan	and grade the control to any of the control to the
$\frac{y=0}{90-\frac{1}{2}gt^{2}=0}$	THE ORDER OF FREE OF THE ORDER OF THE ORDER OF THE ORDER	Company of the Compan
$\frac{1}{2}9t^2 = 90$ $9t^2 = 180$	Normalis and differentiations and or 35 mon	
$6^2 = 180$	erdeniman na aler ir emane meneral Menan	
	5 1	e nazire 179 yangah, alam 1 mililian tanan 1 mililian maya 11 kaharan alin mililian salah 1994 salaman angan sa
t==1/180	- ALLEN AND AND AND AND AND AND AND AND AND AN	
	har i i i i i i i i i i i i i i i i i i i	
$= \sqrt{36} \times \sqrt{5} (t>0, time)$	e or we work designated to the state of the following	THE PROPERTY STATE AND A STATE OF STATE
The state of the s	ti danimaka amaza mediki dan sali ay nga Maliman	
$t = 6\sqrt{5}$	continuous depressant 11 on a de page y out 1 militar	and the state of t
· · · · · · · · · · · · · · · · · · ·	A determination for decay of the consecution on the Co.	en je ukem mandaturakenna i 1
iii when t= 6)=	e e e e e e e e e e e e e e e e e e e	
$x = 50 \times 6 \sqrt{\frac{5}{9}}$	Section Confidence - Laborator Laborator -	W WAS THE CONTROL OF
	A	
= 300 5	en pagagayan da 1114a Baharay ya Haranay	on the control of the state of
'\'	The state of the s	
: lands 300 \ 5 metres from town		

MATHEMATICS EXTENSION I – QUESTION 13		
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
(a) i) \(\frac{3}{3} \sint + \cost = Rsin(t+x)		
		This part of
= Rsintcosx + Rcostsina		the question was
= Rcosa. Sint + Rsina. cost		mostly done
Equating coefficients		well.
$R\cos\alpha = \sqrt{3}0$		
$R \sin \alpha = 1 (2)$ (1) $^{2} + (2)^{2}$		
$\frac{(1) + (2)}{R^2 \cos^2 \alpha + R^2 \sin^2 \alpha} = (\sqrt{3}^2 + 1)$		
R2(1057 x + sin2x) - 3+1		
$\frac{R^{2}(\cos^{2} x + \sin^{2} x)}{R^{2}} = \frac{3+1}{4}$	<u></u>	
R = 2 since R>0	1	
and (2) = (1)		
SING 1	 	
	1 /2	
$\tan \alpha = \frac{1}{3}$		
$\alpha = \frac{\pi}{6}$	1/2	
1. [3 sint + rost = 2 sin (++7/6)		
103117 + 105F - 2511 (TT/6)		
ii) From (U		
$2\sin(4+7)=13$		
$sin\left(t+\pi\right)=5$		
$+ + \frac{7}{6} = \frac{7}{3}, \frac{27}{3}, \frac{137}{3}, \dots$		
$t = \frac{\pi}{6}, \frac{\pi}{2}, \frac{25\pi}{6}, \dots$		Some students
		did not consider
but 0 < t ≤ 1π		the domain that
	1	0 < t < 27.
'6 '2		

.

.

SUGGESTED SOLUTIONS	144 DI46	
	MARKS	MARKER'S COMMENTS
b) $V = \pi \int_{0}^{\pi} \frac{g^{2} \cos^{2} x}{2} dx$	1/1	
U		
$= \pi \int_0^{\pi} \frac{9\cos^2 x}{2} dx$		
$= 9\pi \left(\frac{\pi !}{2} (1 + \cos x) dx \right)$		
-97 57 1+ (0) x dx		
$=\frac{9\pi}{2}\int x + S\ln x \int \pi$	1/2	
- 971 [(TI+SINTI) - (0+SINO)]	1/2	
$= \frac{9\pi^2}{2} u^3$	72	(3)
c) 1) Let T= To+Ae-kt 1)		
dT = -KAe-kt	1	
$= -k[Ae^{-ht} + T_0 - T_0]$ $= -k[T - T_0] from (D_0)$		2
(OR) From D T-To=Ae	1	
$\frac{dI}{dt} = -kAe^{-ht}$		Students who
		did not show
A 0		where Ae-ht
		came from received
		only 1 mark.

SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
)ii) At t=0 T=12, T=60		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		
t=? / T=15°C		
Using T= To +Ae-h6		
uld t=0, T=12, T=60		
60 = 12 + Ae-k(0)		
48 = Ae° A = 48	1	
: T = 12 + 48e	 	
when += 25 T=30		**
=k(25-)		
30 = 12 + 48 e		
$18 = 48e^{-25k}$ $3 = e^{-25k}$		
3 e -25k		
-7 <i>-1</i> 3		
$-25k = \left n \left \frac{3}{8} \right \right $		
$k = -\frac{\ln \left \frac{3}{8} \right }{2^{\frac{1}{8}}} (1)$	1	
25		
When T=15.		
15-12 +480		
3 = 48e - kt	_	G
1 = e -k+		
16 104		Some students
$-kt = n _{16}$		rounded don
$t = \frac{\ln \left \frac{1}{16} \right }{\ln \left \frac{1}{16} \right }$		to 70 minut
= h / 10 16 70.6/		when it show
1 12		have been
In 38 = 71 minutes		Trouvaled up to

were still awarded

SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENT
$x^2 = 4ay$		some students
$(1) \forall = x^2$	1-1-	found dr
4a		ar
$\frac{dy}{dx} = \frac{2x}{4a}$		and dy
cr= 4a		1
= 2		used dy ax = ar
Za		<u>d2</u>
When x = 2at		
dy 2at		Well done.
dz= 2q		
= f. <pre>= must prove</pre> <pre> : gradient of tangent at (2at, at²) is t.</pre>		
equation of tangent at (2 at, at")		
$\frac{y-y_1=m(x-z_1)}{(z-z_1)}$		
$y = at^2 = t (z - 2at)$ $y = at^2 = tx - 2at^2$		
$\frac{y-ar}{y} = fx - 2at^2 + at^2$		
$y = +x - at^2$		
(11) line d parallel to targent at P through focus		. SOME Students
for parallel lines m, =m2		incorrectly
:- M = + focus (o,a)	<u> </u>	Stated the focus
$V-Y_{i}=m(x-z_{i})$		
$y_{-}a = f(x-o)$. well done.
y-a=tr		
y= tx ta		

SUGGESTED SOLUTIONS pg 2 & 14	MARKS	MARKER'S COMMENTS
y = tx + q for x intercept, $y = 0$. $0 = tx + q$		well done.
$+z = -a$ $-\alpha$ $+z = -a$		
$\therefore R \left(-\frac{4}{7}, o \right) \qquad S = (0, a)$	R(I)	
$M = Midpoint$ $= \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$		
$= \left(\frac{-\frac{q}{2} + 0}{2}, \frac{0 + q}{2}\right)$		
$= \left(\frac{-q}{2}, \frac{q}{2}\right)$	M (1)	O
$M = \left(-\frac{q}{2}, \frac{q}{2}\right)$ (q, s)	(1)	only I student
$x = -\frac{q}{2f}$ $y = \frac{q}{2}$		χ ≠ ₀ .
: y is independent of x. x has a domain of all x except x=0		
: equation of locus is $y = 9$ (x \(\pi\)) == of this is because if at vertex, lni though focus parallel to target will	•	

have no a continept.

14 SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
b) cos (2 cos-1x)		
		defficulties
let $2 = \cos^{-1} z$		encountered
(os L = Z		using
		Cos 21=1-2512
: COS (2 cos 2) = cos 21		eta
$= 2 \cos^2 2 - 1$		
$= 2x^2 - 1$		
hence		
1/2		
Cos (2 cos rc) dre		
<u> </u>		
1		
$= \int 2x^2 - 1 dx$		
0 4		
$= \left(2\kappa^3 - \kappa\right)$		
T 9 7°		
= 1 = 1 = 0		
12 2		
= - 5		
= -5 T2		
		Students needed t
(i) $x = 1 + 2\cos(2t - \frac{\pi}{3})$	1.	Show all
$\dot{x} = -4 \sin(\omega t - \frac{\pi}{3})$		steps for
$\ddot{\chi} = 8(\omega s(2+-\frac{\pi}{2}))$		full marks
= -4 [2(05(2+-4)+1-1]		
= -4 [>ć-1] *		
Since * $x = 1 + x \cos(2 + - \frac{\pi}{3})$		
(ii) Centle of motion. ==0	<u>}.</u>	
0 = -4(x-1)		

in x = 1 is the centre of the motion

	$.1f Sin\left(2t-\frac{\pi}{3}\right) = \overline{4}$
	2F-====================================
	$2F = \frac{SIN}{G} = AIT$
	$\frac{1}{12} + \frac{\sqrt{11}}{2}$
	in Airst time is when n=0
	: first time max" speed is reached is t = 12 seyonds
(m)	if at rest, v=o. t=? first time v=o.
. '	$9\dot{c} = -4 \sin(2t - \frac{\pi}{3})$
	$O = Sin(a + \frac{\pi}{3})$
	: 21-5=nr ninteger
	2t = 11 + n11 n (Aleger
	ト - 写 + 7 型
	fight time will be when no
	$\therefore t = \prod_{b} Seconds \qquad (1)$
	amphlude = 2.

MATHEMATICS EXTENSION I – QUESTION		Ø
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
Prove 5k+1 > 4k+1 + 3k+1 -*		This part
if 5k 74k +3k		of the proof
	<u> </u>	was not
hHs = 5 k+1	ļ	attempted
= 5 (5 ^k)		as expected.
> 5 (4k + 3k) using the	1/2	
= 5.4k + 5.3k = xsumpfi	່ວນ,	Common
> 4.4k + 3.3k	1/2	mistates
= 4 k+1 + 3 k+1		made by
5 k+1 > 4 k+1 +3k+1		students
		is clude !
		· Modifying
		the statement
		* without
		Using the
		assumption.
	<u> </u>	· Using the
		inequation
	ļ	49 Qn
		equation
		by substituting
		5K = 4K+3K
		directly into
	-	- ine statement
Step 4	1,	
Since the result is true for n=3, it	1/2	
is also true for n=k+1, iè, n=3+1,		
and so on for n= 3,4,5,		
Induction it holds true for all n =	na tical	
Induction if holds true for all nz	3	

MATHEMATICS EXTENSION I – QUESTION		<u></u>
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
i) LABT = T/2 - 0		
In A ABC,		Students
AB = AC (tangents from an external	1/2	
common point to =		penalised
circle are equal)		for not
		using the
: LABC = LACB = B (angles opposit	e 1/2	appropriate
equal sides of a		terminology
triangle are equa) 	for the
		cirele
In ABCD L CBP = 7/2 (angle subten	del 3	geonery
by the diameter is a		theorems
by the diameter is a right angle).		but it is
		h 3617
LCBT = 71/2 (LDBT is a	<u>\$</u>	recommended
straight angle)	that
: LABT = T/2 - 0		everyone
		recrisits
		th ese
		theorems.
		For example,
		of students
		USEA
		a Hernote
		segment
		segment theorem is short.
		short,
		students
		methods
		methods

SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
30GGESTED SOLUTIONS	IVIANNO	WARREN S COMMUNE WIS
		were avarded
	······································	为mk for
		each
		theorem.
		leading
		towards
		the proof.
1 +=n 20°= 5		Quite -
XZ		Well doze
$x \neq \frac{b}{}$ or cof 20°		by the
t=n20°		majority
		of students
+=n 28° = h	1/2	
'Y=		
yz= h or cot 28°		
+4-n 2-8°		
XZ2 + YZ2 = 5002 Pythag oras		
Theorem.		
$(h)^2 + (h)^2 = 500^2$	1/2	
(Tan 28)		
h2 /- + /- }=500		
(+an 20°) (+an 28) 300		
h2 tan225 + tan220 =250) (100)	Some
tan 200 tan 28°		students
h2 = 250000 x t=== 20 x t=== 28	1/2	made
tan228 + tan220		mistakes
= \(\frac{1255(.44}{}		is their
	1/2	calculations
= 150 metros (nemast metro)		stage'

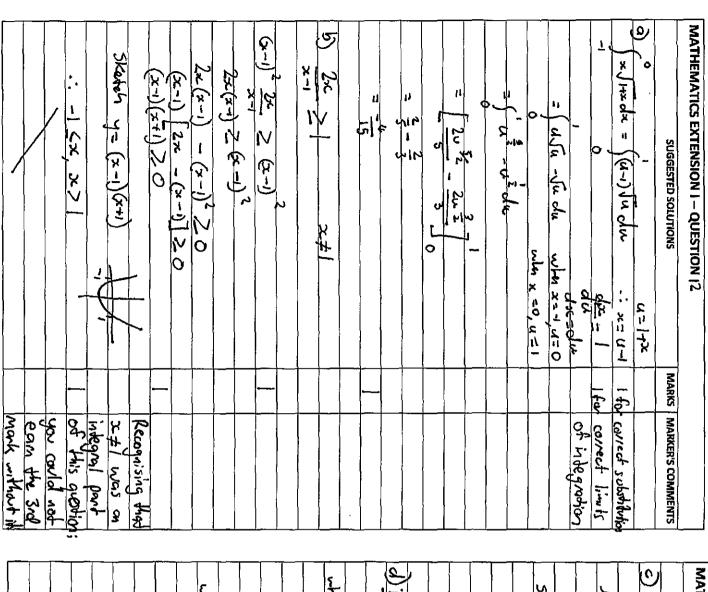
MATHEMATICS EXTENSION I – QUESTION		
SUGGESTED SOLUTIONS	MARKS	MARKER'S COMMENTS
1) From Pythagoras, x2+42=36		
4) From Pythagoras, $x^2 + y^2 = 36$ $y = (36 - 2^2)^{\frac{1}{2}}$		
9		
dy = 1 (36-ze) -1/2 x -2x	1/2	
dx 2		
= -~_	<i>y</i> ₂ _	
$= -\frac{x}{\sqrt{36 \cdot x^2}}$		
From the chain rule, and given that	4	
the rate at which the bottom of		
the ladder slides to the right		
at .		
$\frac{dy}{dt} = \frac{dy}{dt} \times \frac{dx}{dt}$		
= <u>-x</u>		
136-22		
= -2x	1/2	
136-22		
When $t=2$, $x=4m$	1/2	
du 8	1/3	
at 136-16		some students
= -8		Lest the
= <u>-8</u> \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		speed as
= -4	1	-4 · No
15	2	15
the speed at which the		marks were
top falls is 4 m/s		deducted.
(5		Speed, being
		a scalar
		quantity
	 -	leftes pur to

Reference sheet! and t'	12 TP &	$\frac{\partial \mathcal{L}}{\partial x} = \frac{1}{\sin^{-1} x} \times \frac{1}{\sqrt{1-x^2}}$	(b) 4= 10 (3/0-1 x) (2) Pr	-: 0 = 27°	+an0 = ±	11 +12	= -3 1+(t)(3)	tan 0 = m1 - 112 <- (NOTE correct fimile) 1+ m1 m2 Nong fimula, no marks!		$\frac{\partial M}{\partial x} = 1 \qquad \frac{\partial M}{\partial x} = 3 \qquad \text{Of finds } c$ $\therefore m_1 = 1 \qquad \vdots m_2 = 3 \qquad \text{of the lines}$	X-4 4=3x+4	(a) $x-y-4=0$ $3x-y+4=0$ (2) pro	SUGGESTED SOLUTIONS MARKS N	TRIAL EXAM- MATHEMATICS EXTENSION 1 - QUESTION ()
$f'(x) = \sin^{-1} x$ $f''(x) = \sqrt{1-x^2}$	reationing of it plan x f (x)	Solution	provides				,	fimila)	understanding.	sinds gradient elines or	Solution	provides	MARKER'S COMMENTS	

			= 3 (3.50)	7	" 3 X C Since		* <u>3</u> lim 22	xxo sinx	(d) lim . 3x	· which rule on Reference shee	W.	" Litan L & +0	32+22		(c) (8/12 oh	SUGGESTED SOLUTIONS	TRIAL EXAM- MATHEMATICS EXTENSION 1 - QUESTION
				11		Θ			4	•	9		9		(2)	MARKS	STION
					towards	denonstrates progress		correct	provides		Sir lan &		ませ out the	correct Solution	provides	MARKER'S COMMENTS	

4	
(kìng.	answer by showing every step of working.
the given	is asking you to completely justify the given
then it	If the question says "show that
each factor	① O &r each
	=(x+3)(x-4)(x-4)
	P(x) = (x+3)(x2-6x+8)
	•
	8x +24
	8x +24
	-6x2-18x V
	-6x2-iox
	- x3 +3x2 V
	x+3) x3-3x2-10x+24
cquivalent	22-6x +8 - 0 or car
J+ ^	a factor of P(x) Owi
=	Since P(-3)=0 then (x+3) is
	(1)
	= -27-27 +30+24
	P(-3) = (-3)3-3(-3)2-10(-3) +24
	(e) let P(x)=x3-3x2-10x+24
MARKER'S COMMENTS	SUGGESTED SOLUTIONS MARKS
	TRIAL EXAM- MATHEMATICS EXTENSION 1 - QUESTION

SUGGESTED SOLUTIONS MARKS	MARKS	MARKER'S COMMENTS
let P(x)= x3-3x2-10x+24		
x+3)x3-3x2-10x+24) og	equivalent
X3 +3x2 V		
-6x2-10		
-px2-18x V		
8x + 24		
8x + 24		
O		
Since there is a zero remained	ζ,	
	, 	1 gr show
		that" site
$P(x) = (x+3)(x^2 - 6x + 8)$		Z Z
=(x+3)(x-4)(x-4)		
(f) (f)	لجور د	each factor.



= 2.5/14/05&
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 | 44. | < x. | 41
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 | | = - 1962= | 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 =
 | The ball shikes. 1902 - \frac{7}{365 + C4} 1902 - \frac{7}{365 + C4} 1900 - \frac{7}{365 + C4} 190 | 18 = 18 de = 19 de = 1 | 18 = 18 18 18 18 18 18 18 | when \$\frac{1}{2} = \frac{1}{2}g\frac{6}{2} + C4 \[
\frac{1}{2}g\frac{1}{2}\frac{1}{2}g\frac{1}{2}\frac{1}{2}g\frac{1}{2}\frac{1}{2}g\frac{1}{2}\frac{1}{2}g\frac{1}{2}\frac{1}{2}g\frac{1}{2}\frac{1}{2}g\frac{1}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}g\frac{1}{2}g\frac{1}{2}g\frac{1}{2}g\frac{1}g\frac{1}{2}g\fra |
| | _ | |
 | | | •
 | | | ک
۱۱
 | ۷) | 120 | 18 = 2-9 to 4 = 18
 | y= \-9tdt
y=\-\frac{18}{9t^2+C4}
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 120 - 19 t - 29 | 18 = 29 = 29 = 18 = 18 = 18 = 18 = 18 = 18 = 18 = 1
 | = 300 \\ \frac{180}{3} = 300 \\ \frac{180}{3} = 300 \\ \frac{5}{3} = 300 |
| SUGGESTED SOLUTIONS MARKETS COMMENTS | MARKS | |
 | | | 3
 | 5 :: | : 6 | ٠. 6
۲: 6
 | ج ر ج | .: 4= -9t dt
 | 18 = 18 18 18 18 18 18 18
 | 18 = 18 18 18 18 18 18 18 | : 4= -9t dt y= \-9t dt y= \-9t dt \\ \= \-\frac{1}{2}\tes \\ \= \-\frac{1}{2}\tes \\ \\ \= \-\frac{1}{2}\tes \\ \\ \\ \= \-\frac{1}{2}\tes \\ \\ \\ \\ \= \-\frac{1}{2}\tes \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 38 = 29
38 = 29
38 = 29
38 = 29
30
 | : 3= -9t y= \-9t ott y= \-9t ott = \frac{1}{9} \frac{1}{2} \fra |
| 4:: | 4:: | 4: 3 | ٢٠ ١١ ٢
 | ٧٤٠ : | ۲۱ د د | 411
 | 4 | |
 | | 120 - 19tot
- 1902 - 1962 - 90
- 1902 - 1962 - 90
- 1903 - 1962 - 90
- 1963 - 1963 | J= \-9tdt | A = 2 = 18
26 = 18
26 = 18
26 = 18
26 = 18
27 = 10
29 = 10
20 = 10
 | 18 = 2-9 t dt = 18 | The ball shikes - 1962 - 964 - 90 - 1903 - 1963 - | = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
 |
| ٠:٠: | ٠:٠: | ۲۰:۰ | ۲۲۰:
 | ۲۲۰ | ۲۲. | 4
 | 4 | |
 | | 18 = 1-96.7 C4 | 18 = 18 18 18 18 18 18 18
 | 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 = | 120 129 129 12 18 18 18 18 18 18 18 18 18 18 18 18 18 | 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 =
 | mkn t= 0, 19tott : 90 = \frac{1}{2} \(\text{(0)} \) t = 90 : 4 = 90 - \frac{1}{2} \(\text{(1790} \) The ball shikes the ground (m) 4=0 - \frac{1}{2} \(\text{(180} \) 4=0 - \frac{1}{2} \(\text{(180} \) \[\frac{1}{2} \text{(180} \] \[\frac{1}{2} \text{(180)} (180) |
| 44: | 44:: | 4: | 44:
 | 44. | < x. | 41
 | | | \downarrow
 | 1 | 18 = 18 5 18 18 18 18 18 18 |
 | The ball strikes | |
 | - 186. 4 C4 - 1903 - 296. 4 C4 - 1903 - 296. 4 C4 - 1905 - 296. 2 - 196. 2 = 0 - |
| 4.:. | 4:: | 4: | 4.
 | 44 | , 4. | 1
 | ` \ \ | , < | 1
 | , | | The ball strikes. 190- 192- 0 190- 196- 0 190
 | The ball shikes. - 190- 1962-00 - 190- 1962-00 - 190- 1962-00 - 190- 1962-00 - 190- 1962-00 - 190- 1962-00 - 190- 1962-00 - 190- 1962-00 - 190- 1962-00 - 190- 190- 190- 190- 190- 190- 190- 190 | | 18 = 18 (0) + 1 - 18 (18
- 18 (18 - 18 | - 180 (3 (40) (40) (40) (40) (40) (40) (40) (40) |
| 11 44.: | 11 44 | 11 44 | 11 44.
 | 11 44. | 11 44. | 11 44
 | ا، ا | 11 < | 11
 | 11 | |
 | | |
 | = 300 \\ \frac{3}{3} \\ = \frac{1}{2}g6 + C4 \\ \frac{1}{2}g6 + C4 |
| 11 44. | 11 44. | 11 44. | 11 44.
 | 11 44. | 11 44. | ا ا دد
 | 11 4 | 11 < | 13
 | 11 | |
 | | |
 | when \$= \$\frac{2}{5}\(\text{(0)}\) = \frac{1}{2}\(\text{(0)}\) \(\text{(1)}\) = \frac{1}{2}\(\text{(1)}\) = \frac{1}{2}\(\text{(1)}\) \(\text{(1)}\) = \frac{1}{2}\(\text{(1)}\) = \frac{1}\(\text{(1)}\) = \frac{1}{2}\(\te |
| 11 44.: | 11 44.: | 11 44. | 11 44:
 | 11 44. | 11 44. | 11 44
 | 11 4 | ا ۱۱ ح | 11
 | 11 | |
 | - 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 | |
 | when \$= \$\frac{1}{2}\text{(0)}^2 + C_4 \[\frac{1}{2}\text{(0)}^2 + C_4 \] \[\frac{1}{2}\text{(0)}^2 + C |
| 11 44: | 11 44: | 11 44: | 11 44:
 | 11 44 | 11 45. | 11 4
 | 11 L | א און מ | 11 L
 | 11 L | |
 | | |
 | - 136x 5 (\$70) to the ground of the ball strikes the ground of the following the strikes the ground of the following the followi |
| .: y= -9t
y= ∫-9tdt
∴ y= -9t
∴ y= -9t | : 3= -9t
y= \-9tdt
\:\frac{2}{2} - \frac{2}{2} \cdot | :: 3= -9t
y= \-9tdt | : y= -9t
y= \frac{1}{2} = \fr | j= -9t
y= ∫-9tdt
√ = -½8t+C+ | 7= \-3 t 3 t 3 t \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 7= \-\frac{1}{2} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 7-9tdt
1010-1-1 | 7 = \-9645 = = \ | 7= \-9tdt | y= \-9¢dt | 18 = 19 (0) + C4 = 18 = 18 = 18 = 18 = 18 = 18 = 18 = 1 | 18 = 18 (0) + c4 = 18 = 18 = 18 = 18 = 18 = 18 = 18 = 1 | 18 = 18
18 = 29 6
10 = 29 6 = 06
10 = 00 = 20 62
10 = 00 = 00
10 = 00 | 18 = 18 (0) + C4 = 18 = 18 = 18 = 18 = 19 = 19 = 19 = 19 | 18 = 29 (0) + C4 = 18 (0) + C4 = 18 (0) + C4 = 19 (0) + C4 | : 90 = 29 (0) 2 + C4 : 42 = 40 The ball shikes the ground in the following the ground in the ground |
| : G=0
: y= -9t
 | : 3= -9t
y= \-9tdt | ∴ ÿ= -9tdt ∴ ÿ= -9tdt ∴ ÿ= -9tdt | y=\-9tdt | 7 = 1-8t = -6
A = 1-8t = -6
- 3 = -6 = -6 | y=\-9tdt
\\frac{1}{2}-\frac{1}{2}tdt | 7 = 3-9t dt
y = 3-9t dt
- 3-9t dt | 7=\frac{1}{2}\frac{1}{ | h= \-9tdt | 7=\frac{1}{2}\frac{1}{ | h=)-9tdt
γ=)-9tdt | 18 = - \frac{1}{2} \left(0) \frac{1}{2} \f | 18 = 18 (0) 2+ C4
190 = - 29 62 - 90
190 - 20 | 18 = 18 18 18 18 18 18 18 | 1905 - \$9(0) \$104
1905 - \$962
1900 - \$962 | 1905 - \$9(0) + C4
1905 - \$9 6 - 20 62
1900 - \$0 62 = 0
1900 - \$ | : 90 = \frac{1}{29} \begin{align*} \(\text{c} \) = \frac{1}{29} \begin{align*} \text{distance} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ |
| y= -9t y= \-9tot y=\-18t^4C4 \tag{6.20} | y= -9t
y= ∫-9tdt
y= -½8t ² +C4
2 -½8t ² +C4 | .: y= -9t
y= \-9tdt
\-2-\frac{1}{2} \-9tdt | y= -9t
y= ∫-9tdt
y= -½8t²+C4
2 -½8t²+C4 | y = ∫ -9tdt
y = ∫ -9tdt
19tdt
> - 19tdt | y= -9t
y= ∫-9tdt
= -\frac{1}{2} \frac{1}{2} \fra | y= 2-9tdt
y= 1-9tdt
y= 1-9tdt
y= 1-9tdt | mkn t=0 u=90
= -\frac{1}{9}\frac{1}{2} \cdot \frac{1}{2} \cdot \fr | y = ∫ -9tdt
= -½8t+C4
y = ∫ -9tdt | y=)-9tdt
= - 1 2 1 1 2 1 1 2 1 1 2 1 | y= \-9tdt
18t+C4
y= \-9tdt | 18 = 19 (0) + C4
19 = - 19 t = 90
190 - 190 t = 90
190 | 18 = - = 9 (0) = 18 = 18 = 18 = 18 = 18 = 18 = 18 = 1 | 18 = 18 | 18 = 18 (0) + C4
1903 - 2962 - 90
190 - 9 | 18 = 29 (0) = 10
19 = -29 62 = 00
19 = -30 = 20 = 00
19 = -30 = 00
19 = -30 = 00
24 62 = 00
25 62 = 00
26 62 = 00
27 62 = 00
28 62 = 00
28 62 = 00
29 62 = 00
20 70 = 00
20 7 | : 90 = \frac{1}{2} \left(0)^2 + C4 The ball strikes the ground on \frac{1}{2} |
| : 4= -9t
y= \-9tdt
= -\frac{1}{2}8644C4 | : G=0
: y= -9t
y= \-9tdt
-\frac{1}{2}\fra | .: y= -9t
y= ∫-9tdt
y= -18t3+C4
— y= -9t
— y= -9t | y=\-9tdt y=\-9tdt
-\frac{1}{2}\ | y= \-9tdt y=\-9tdt -\frac{1}{2}\-9tdt | y=\-9tdt y=\-9tdt -\frac{1}{2}\text{9}\text{6}\text{7}\text{7}\text{6}\text{4}\text{6}\text{7}\text{6}\text{7}\text{6}\text{7}\text{6}\text{7}\text{6}\text{7}\text{6}\text{6}\text{7} | men t=0, y=90 y=\frac{1}{2}+C4 \frac{1}{2}+\frac{1}{2}+C4 \frac{1}{2}+C4 \
 | y= \-9tolt = -\frac{1}{2}\text{0}\text{0} | y = ∫-9tdt
y = ∫-9tdt
y = ∫-9tdt | y= \-9tdt
= -\frac{1}{2}θt + C4
 | y = ∫-9tdt
= -\frac{1}{2}+C4 | 18 = 19 = 19 = 18 = 18 = 18 = 18 = 18 = | 18 = 18 18 18 18 18 18 18
 | 18 = 18 = 18 = 18 = 18 = 18 = 19 = 19 = | 17e ball shikes 190- 2962-90 | 18 = 29 = 29 = 18 = 29 = 29 = 29 = 29 = 29 = 29 = 29 = 2
 | .: $\frac{403}{296}$. $\frac{100}{296}$. $$ |
| .: y= -9t
y= ∫-9tot
y= ∫-9tot
 | :: 4= -9t
y= \frac{-9t0t}{-9t0t}
when t=0, y=90 | :: G=0
y= \-9tdt
= -\frac{1}{2} \cdot \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | y= -9t
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√ 1 -9t dt | y = -9t
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y = ∫-9t dt
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y = ∫-9t dt | men t=0, y=90

 | men t=0, y=90
= -\frac{1}{9}t^2 + C4 | y= }-9tdt
= -\frac{1}{2} + C4
y= -\frac{1}{2} + C4 | men t=0, y=90
= -\frac{1}{2} \frac{1}{2} | y= }-9tdt
= -½8ξ²+C4
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 | 18 = 19 = 90 = 90 = 90 = 90 = 90 = 90 = 90 | 18 = - 19 t 2 - 98 = 18 42 = 18 42 = 09 - 19 t 2 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 15 = 18 = 18 = 18 = 18 = 18 = 19 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 =
 | 1 = 20 - 29 + 2 - 18 The ball shikes 10 - 29 + 2 - 00 100 - 29 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + 20 100 - 20 + | 18 = 18 4
 | : $c_{4} = 90$ $y = -\frac{1}{2}9 + 190$ $y = 90 - \frac{1}{2}9 + 2 = 0$ $y = 90 - \frac{1}{2}9 + 2 = 0$ $y = 90 - \frac{1}{2}9 + 2 = 0$ $y = 180$ $y = $ |
| : 3= -9t
y= \-9tdt
= \frac{1}{2}\frac{1}{2 | :: 3= -9t
y= \-9tdt
= -\frac{1}{2}\frac{1} | y= -9t
y= ∫-9tdt
y= -½8€+C4
when t=0 y=90 | y=\-9tdt -\frac{1}{2} \frac{1}{2} 1 | | y= \-9tdt -\frac{1}{2} \frac{1}{2} \frac\ | men t=0 y=90
 | y= \-9tolt -\frac{1}{2}\frac{1}{ | men t=0 y=90 - = \frac{1}{2} | y= }-9tolt | men t=0 y=90
= -\frac{4C4}{2+C4} = -\frac{1}{2} \frac{1}{2} \frac} | 18 = 19 = 19 = 18 = 18 = 18 = 19 = 19 = | 18 = 18 18 18 18 18 18 18 | 18 = 18 = 18 = 18 = 18 = 18 = 19 = 20 = 20 = 20 = 20 = 20 = 20 = 20 = 2 | 81 = 29
81 = 29 6 = 20
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20 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 = | $\frac{1}{14} = \frac{1}{20} $ |
| : 42 - 9t
y= \(-9t\) dt
= \(\frac{1}{2}\) \(\frac{1}2\) \(\frac{1}{2}\) \(\frac{1}2\) \(| : 3= -9t
y= \-9tdt
y=\frac{1}{2} \tag{6} + C4
when t=0 y=90
:90=-\frac{1}{2} \tag{6} \tag{7} + C4 | :: 3= -9t
y= \-9tdt
= -\frac{1}{2} \cdot \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | : y= -9t y= \frac{1}{2} = \fr | y = ∫-9tdt
y = ∫-9tdt
= -\frac{1}{2} \frac{1}{2} \f | y= -9t
y= \-9tolt
-\frac{1}{2} \tag{6} \tag{7} \t | y = \-9tdt y = \-9tdt -\frac{1}{2}1 | y= \-9tdt -\frac{1}{2} \frac{1}{2} \frac | y=\-gtdt = \-\frac{1}{2}\frac{1}{ | y=\-9tdt -=09-=90 -=90-=90 -=900+-c4 | y= \-9tdt
 | 18 = 18 = 18 = 18 = 18 = 19 = 19 = 19 = | 18 = \frac{1}{2} \ | 18 = 29 f = 18 18 18 18 18 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19 | 1 = - = = = = = = = = = = = = = = = = = | 18 = 29 & 20 = 18 & 20 = 20 & 20 = 20 & 20 & 20 & 20 & 20 | The ball strikes the ground in the ball strikes the ground in the ground |
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= -\frac{1}{2}\frac{1}{ | :: 3= -9t
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y= \-9tolt
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-\frac{1}{2}\frac | y= -9tdt y= \-9tdt -\frac{1}{2}1 | y = ∫ -9tolt y = ∫ -9tolt = -\frac{1}{2}\ | men t=0 y=90
- 19tott
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y=\-19 | y= \-9tot
= -\frac{1}{2}1 | y= \-9t dt - \frac{1}{2} \fr | y= \-9tott
 | y=\-\frac{-\frac{1}{2}\chi \frac{1}{2}\chi \chi \chi \chi \chi \chi \chi \chi | 18 = 18 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 =
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81 = 29 6 = 20
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29 6 = -06 = 0
29 6 = -06 = 0
29 6 = -06 = 0 | 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 =
 | $\frac{1}{16} = \frac{1}{20} $ |
| : 4= 9t
y= \(-9t \text{dt} \) = \(\frac{1}{2}\text{60}\text{7}\text{C4} \) when t= 0, y=90 : 90= -\frac{1}{2}\text{60}\text{7}\text{1}\text{C4} \) = \(\frac{1}{2}\text{9}\text{60}\text{7}\text{1}\text{C4} \) | : 3= -9t
y= \(-9t\)dt
= \(\frac{1}{2}\)\ = | :: 3= -9t
y= \-9tdt
y= \-\frac{1}{2}\cho\frac{1}{2}\cho\frac\frac{1}{2}\cho\frac\frac\frac\frac\frac\frac\frac\frac | : y= -9t y= \frac{1}{2} \cdt \frac{1} \cdt \frac{1}{2} \cdt \frac{1}{2} \cdt \frac{1}{2} \cdt \f | y = ∫-9t dt y = ∫-9t dt y = ∫-19t dt y = ∫-19t dt y = √19t dt y = √19t dt y = √19t dt y = √19t dt | y= \-9tdt when t=0 y=90 -19tdt y= \-9tdt y= \-9tdt -19tdt | y= \-9tolt -\frac{1}{2}(0)\frac{1}{2}(0) -\frac{1}{2}(0)\fr | y= \-9t dt -\frac{1}{2}(0)\frac{1}{2} C \frac{1}{2} C \f | y = \-9tdt = -\frac{1}{2}\cho \frac{1}{2}\cho \cho \cho \cho \cho \cho \cho \cho | y = \ -9t dt - \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | y= }-9tdt = -\frac{1}{2}1 | 18 = -\frac{2}{2} = 18 = 18 = 19 = 90 = 90 = 90 = 90 = 90 = 90 = 90 | 18 = = = = = = = = = = = = = = = = = = = | The ball shikes - 90 - 2962 = 00 - 2962 = | 120 120 120 120 120 120 120 120 120 120 | The ball shikes. 190- 3962-90 420 420 | The ball shikes the ground with the ball shikes the ground with the state of the ground with the state of the |
| : 4=90
: 3= -9t
y= \-9t dt
= -\frac{1}{2}6\frac{1}{2} - 4
when t=0, y=90
: 90= -\frac{1}{2}6\frac{1}{2} + C4 | : 4=90
: 3= -9t
y= \-9tdt
-\frac{1}{2}\fr | | :: \(\frac{1}{2} - \frac{1}{9}\tau \) \[\frac{1}{2} - \frac{1}{2} \frac{1}{2 | | $\frac{y = y = -9t}{x - \frac{1}{2}gt^2 + C4}$ when $t = 0$, $y = 90$ $\frac{1}{2}gt^2 + C4$ $\frac{1}{2}gt^2 + C4$ | y = ∫-9t dt
y = ∫-9t dt
±96x+C4
±96x+C4
±96x+C4
±96x+C4 | y=\-9tolt =\frac{1}{2}\text{gt} + C4 when t=0, y=90 \text{gt} + C4 \text{gt} + C4 \text{gt} + C4 | y = \ -9tdt -\frac{1}{2}1 | y= \-9tolt = -\frac{1}{2}\text{gt} + C4 when t=0, y=90 \text{-90} + C4 \text{-90} | y = \-9tdt -\frac{1}{2}(6)\frac{1}{2}(4) = \frac{1}{2}(6)\frac{1}{2}(4) = \frac{1}{2}(6)\frac{1}{2}(6) = \frac{1}{2}(6) = \frac{1}{ | 1 = 90- 2962
1 = 90- 2962
1 = 90- 2962
1 = 90- 2962
1 = 90- 2962
2 | The ball shikes. 190- 1962 - | 18 = 18 34 2 18 34 2 18 34 2 2 9 5 2 | 1 = 90 - 2962
1 = 90 - 2962
1 = 90 - 2962
1 = 90 - 2962
2 = 90 | The ball shikes. 190- 796- 00- 1965 190- 796- 00- 1965 400- 796 | The ball shikes the ground will yell shikes the ground will shike shikes the ground will shike shikes the ground will yell shikes the ground will shike shike shikes the ground will shike shikes the ground will shike shikes the ground will shike |
| : (3=0
: 3= -3t
- 1586,4C4
- 1586,05+C4
: C4=40 | : (3=0
: 3= -3t
- 1-3t off off off off off off off off off of | :: G=0
:: y= -9t
-= -\frac{1}{2} \cdot \ | : y= -9t y= \frac{1}{2}\frac{1}{ | y = \-9t dt | y= -9t y= \frac{1}{2}\frac{1} | y = ∫ -9t dt
π/αη t= 0, y=90
- 19t γ + C φ
- 20 γ + C | y = \-9tot
when t= 0 y=q0
.: C4=q0
.: C4=q0
.: C4=q0
.: C4=q0
.: C4=q0
.: C4=q0
.: C4=q0 | y = \ -9tdt -\frac{1}{2} - \frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | y= \-9tdt -\frac{1}{2}(0)\fr | y= \-9tdt -\frac{1}{2}\frac{1}{ | The ball strikes | The ball shikes. 190- 396- 90 420 420 | 16 pall 24 pes - 06 - 29 pe - 20 - 29 pe - 20 | The ball strikes. 190- 3962-90 190- 3962-90 290-3963 | 1 = 29 = 29 = 29 = 29 = 29 = 29 = 29 = 2 | The ball strikes the ground in 420 = 30×6 \\\ \[\frac{1}{9} = \frac{1}{9} \\ \frac{1}{9} = \frac{1}{3} \\ \frac{1}{3} = \frac{1}{3} \\ \frac{1}{9} = \frac{1}{3 |
| :: 3= -9t
y= \-\frac{065}{7605} + Ct
\\ \frac{1}{2} - \frac{1}{2} + \f | :: 3= -9t
-: 3= -9t
-: 3= -9t
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-: 3= -9t | $\frac{36-17}{36-10}$ $\frac{36-17}{36-10}$ $\frac{36-17}{36-10}$ $\frac{36-17}{36-10}$ $\frac{36-17}{36-10}$ | 7 - 3 - 9 t | .: $\dot{\lambda} = \frac{0.000}{0.000}$ | .: $\dot{\lambda} = -3\varphi$.: $\dot{\lambda} = -3\varphi$.: $\dot{\lambda} = -2\varphi$.: $$ | 1 | 1 = 3 - 9t of t | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 1 = 3 - 9 t of t | 3 = \frac{7-400}{06= \frac{7}{7} \cdot \frac{7-50}{7} \cdot \frac{7-50}{7} \cdot \frac{7-70}{7} \cdot \frac{7-70}{ | 16 pall ships. | 19 59 11 5h/ks | 18 = 29 = 18 = 18 = 18 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 18 59 1 3h 185 - 06 2 0 - 59 6 2 - 0 6 2 0 5 6 2 2 0 6 2 0 5 6 2 6 2 6 2 6 2 6 2 6 2 6 2 6 2 6 2 6 | 14 6 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | The ball strikes the ground in 190- 39t2 = 0 - 36x \ \frac{3}{5} - 36x |
| : y= -9t : y= -9t 19t | : 4= -\frac{1}{2} \frac{1}{2} | : C=0 | : y= -9t
y= \-9t olt
y= \-9t olt
when t= 0 y= 90
: cy=90
: cy=90
: cy=90
: cy=9t
 | : 4= - \frac{1}{2} \frac{1} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \f | : y= -\frac{1}{2}\frac | .: $h = \frac{1}{2} + \frac{1}{2} $ | : 4 = - = - = qt + 790 : 4 = - = - = qt + C4 .: 4 = qt + C4 .: 4 = - qt + C4 .: 4 = - qt + C4 .: 4 = - qt + C4 .: | y = \ -\frac{1}{2}\chi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | : 4= - = qt + C4 .: 4= - = q0 | y = _\dt\\ \[\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 120 19 52 18 18 19 19 19 19 19 19 19 19 19 19 19 19 19 | 17e ball shikes. | 16 pall 3pikes - 420 - 50 fz = 00 fz = | 14 50 1 37 165 - 18 42 - 96 - 29 62 - 96 62 - | 17e pall shipes. | The ball shikes the ground will you to |
| | | : | : | : | .: $\dot{y} = -\frac{1}{2} \dot{q} \dot{z} + \frac{1}{2} \dot{q} \dot$ | 3 = 2 - 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + | y = ∫-9t0t
- 10 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + | y = \frac{1}{2} \ | y = ∫ -9tdt - 10t 156 = - 5 dt 154 - 10t 156 = - 5 dt 156 - 10t 156 = - 5 | h= ================================= | 16 pall shipes. | 196 5911 37162 - 18
190 - 70 = 0
190 - 70 = 0
190 - 70 = 0 | 18 = 19 = 18 = 18 = 18 = 19 = 19 = 19 = | 16 pall 24/25 0 | 14 59 1 37 182 - 18
190 - 796- 0
190 - 796- 0
190 - 796- 0 | The ball strikes the ground in 420 = 20 × 6 \frac{3}{3} when t= 6 \frac{3}{3} \frac{180}{9} \frac{180}{2} \frac{180}{9} \ |
| | : 3 -9t dt y = \frac{1}{2} | | | $\frac{1}{3} = \frac{1}{2} \frac{1}{3} \frac{1}{5} $ | $y = -9t$ y = $\int -9t dt$ when $t = 0$, $y = 90$ $40 = -\frac{1}{2}9(0)^{2} + C4$ | $ \frac{y}{z} = \frac{1}{2} \frac{1}{9} \frac{1}{5} \frac$ | H = \frac{1}{2} \f | y=\frac{1}{29tolt} =\frac{1}{29tolt} =\frac{1}{29 | y=\frac{1}{2}\frac{1}{ | $y = \int -9 t dt$ $= -\frac{1}{2} g t^{2} + C t$ $\therefore 4 = -\frac{1}{2} g (0)^{2} + C t$ $\therefore 4 = -\frac{1}{2} g (0)^{2} + C t$ $\therefore 4 = -\frac{1}{2} g (0)^{2} + C t$ $\therefore 4 = -\frac{1}{2} g (0)^{2} + C t$ | 14 69 11 37 142 - 06 - 19 62 - 0 19 62 - 0 19 62 - 0 19 62 - 0 19 62 64 64 64 64 64 64 64 64 64 64 64 64 64 | The ball shikes 18 - 18 - 18 - 18 - 18 - 18 - 18 - | 16 pall 24/25 0 | 14 59 11 5h 142 - 90 - 19 t = 90 - 19 t = 90 - 90 - 90 t = 90 - 90 - 90 - 90 - 90 - 90 - 90 - 90 | The ball shikes - 18 420 42 = 00 - 20 t2 = 00 42 = 00 - 20 t2 = 00 - 20 t2 = 00 = 00 = 00 = 00 = 00 = 00 = 0 | The ball strikes the ground will you - = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = |
| | | : y= -9t
y= \frac{1}{2} \frac | $\frac{1}{3} = \frac{1}{3} + \frac{1}$ | $\frac{1}{3} = \frac{1}{3} + \frac{1}$ | $\frac{y = \frac{1}{2} - \frac{1}{2} t dt}{y = \frac{1}{2} - \frac{1}{2} t dt}$ $\frac{y = \frac{1}{2} - \frac{1}{2} t dt}{y + \frac{1}{2} - \frac{1}{2} t dt}$ $\frac{y = \frac{1}{2} - \frac{1}{2} t dt}{y + \frac{1}{2} - \frac{1}{2} t dt}$ $\frac{y = \frac{1}{2} - \frac{1}{2} t dt}{y + \frac{1}{2} - \frac{1}{2} t dt}$ | y= -30-30b2 y= 2-364.4C4 y= -\frac{7}{2}\frac{1}{2}1 | $y = \int -9 t dt$ = $-\frac{1}{2} g t^{2} + C_{4}$ $y = -\frac{1}{2} g (0)^{2} + C_{4}$ | y = \frac{1}{29tdt} | y= \-9tdt = \frac{1}{2} \frac | y = 90-30b2 .: y = -\frac{1}{2} | 190 - 29 t2 = 090 - 29 t2 = 0 | 14 6 5 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 18 = 18 = 18 = 18 = 18 = 19 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 18 = 29 5 18 18 18 18 18 18 18 | 14 6 5 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | The ball strikes the ground in 420 = 19t2 = 0 \[\frac{1}{90} - \frac{1}{9}t^2 = 0 \] \[\frac{1}{9}t^2 = 180 \] \[\frac{1}{9} |
| : 3 - 9 t - 3 t - 9 t - | : 3 - 9 t - 3 t - 9 t - | | y= -9t
y= \(\frac{1}{2} \ | $\frac{1}{3} = \frac{1}{3} + \frac{1}$ | y= -9t
y= \frac{1}{2} \fra | y = \frac{1}{9} t dt \[\frac{1}{2} - \frac{1}{2} \frac{1}{2} t \frac{1}{2} \\ \frac{1}{2} - \frac{1}{2} \frac{1}{2} \frac{1}{2} - | y= 90- 19t2
- 19t2+C4
- 19t2+C4
- 19t2+C4
- 19t2+C4
- 19t2+C4
- 19t2+C4
- 19t2+C4 | y = \ -9talt - \frac{1}{2} \f | y= \-9tdt | y= \-9talt = \frac{1}{2} \fra | The ball strikes. | 16 pall strikes - 18 - 18 - 18 - 20 - 20 - 20 - 20 - 20 - 20 - 20 - 2 | 14 50 1 5hikes - 420 - 19 1 5hikes - 92 - 92 - 92 - 92 - 92 - 92 - 92 - 9 | The ball strikes - 18 420 190- 29t2-90 - 29t2-90 - 29t2-90 | 1 = 29 5 5 5 5 5 5 5 5 5 | The ball strikes the ground in 420 = 50 x 6 \\\ \[\frac{1}{9} = \frac{1}{9} \\ \frac{1}{9} = \frac{1}{36} \times \\ \frac{1}{36} = \frac{1}{36} \times \\ \frac{1}{9} = \frac{1}{36} \times \\ \fr |
| | | : 3 - 9t - 3t - 3t - 3t - 3t - 3t - 3t - | $\frac{1}{3} = \frac{1}{3} + \frac{1}$ | : | $\frac{3 + \frac{1}{2} $ | h= 2-46 f + 24
mpcu t= 0 h= 40
h= - 76 f + 2h
h= - 76 f + | $ \frac{1}{3} = \frac{1}{3} + 1$ | y = \frac{24 \rho \frac{1}{2} \rho \fra | y = \frac{1}{2} \ | y = ∫-9¢4¢t
- + 20 + 200
- + 200 + 200
- + 2 | 14 6 5 11 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 14 6 5 1 5 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 | 18 = 18 = 18 = 18 = 18 = 19 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 18 = 29
81 = 29 6
10 = 29 6 = 06
10 = 29 6 = 06
10 = 29 6 = 06 | 14 6 5 1 5 1 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 | The ball strikes the ground in 420 = 19t2 = 0 \[\frac{1}{9} = \frac{1}{9} \tau = \frac{1}{80} \] \[\frac{1}{9} = \frac{1}{36} \tau = \frac{1}{36} \] \[\frac{1}{9} = \frac{1}{36} \tau = \f |
| : \\ \(\frac{1}{2} \) \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | : 32 -9t
y= \frac{1}{2}\frac{1}{ | | y= -9t y= ∫-9tolt y= -½9tolt ½9tolt | $\frac{1}{3} = \frac{1}{3} + \frac{1}$ | | $ \frac{\lambda}{\lambda} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{1}{2} \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} = \frac{\partial \phi}{\partial x} + \frac{\partial \phi}{\partial x} +$ | y= \frac{1}{2} \f | $ \frac{1}{3} = \frac{1}{3} + 1$ | y= \-9tat -\frac{1}{2}\frac{1}{2 | y= _\delta \frac{1}{9} \frac{1}{10} 1 | 18 20 25 20 10 10 10 10 10 10 10 10 10 10 10 10 10 | 18 = 27 8 = 18 20 = 18 20 = 20 = 20 = 20 = 20 = 20 = 20 = 20 | 18 = 29
18 = 27 8 = 06 P
10 = 27 8 = 06 P
10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 18 = 29
190 - 70 = 0
190 - 70 = 0
190 - 70 = 0 | 18 = 29
18 = 29 & = 06
19 = 29 & = 06
19 = 29 & = 06
19 = 20 & = 05 | The pall strikes the ground will have $\frac{2}{36}$ and $\frac{2}{36}$ when $\frac{2}{36}$ $\frac{2}{3$ |
| 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 24 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 2 4 4 5 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 | 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | C 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 5 1 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
 | 7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
 | 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 81 = 29 & = 08 & = 08 & = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 81 = 27
81 = 27
10 | 81 = 29
81 = 29 6
20 = 27 6 = 06
100 = 27 6 = 06
 | 81 = 29
81 = 29 6 = 20
10 = 29 6 = 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | 81 = 29
81 = 29 6
20 = 27 6 = 06
20 = 27 6 = 06
20 = 27 6 = 06
 | $\frac{146 \text{ pell 3111469 1469 147040147}}{420} = 300 \frac{2}{3} \frac{180}{3} $ $\frac{146 \text{ pell 311469 149}}{420} = 0$ $\frac{146 \text{ pell 311469 149}}{420$ |
| 7 = 3-9 = 20
- 3-2-29 = 20
- 30 = -29 = 20
- 30 = -20
- | 365-06= 6
- 362-26
- 302-5860
- 302-586 | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 7 = 3-9 = 3-9 = 2
- 30 = -29 = 20
- 30 = -20
- 30 = -20 | 7 = 9-24852
- 4 = 90 = 90
- 90 = - 1963 + C4
- 1963 - 1963 + C4
- 1964 - 1963 + C4
- 1964 - 1963 + C4
- 1964 - 1964 + C4 | 7 = 3-9 t dt y = 3-9 t dt - 40 = -29 t dt - 10 = -29 t dt - 29 | A = 2-6 = 40
- 30 = -59 (0) + C4
- 30 = -59 (0) + | 7 = 3-96-296-20
- 402-296-20
- 102-296-20
- 102-20
- 102 | A = 2-8 top 2 | 7 = 3-9tdt -2465-06 = 40 -2465-20 | y= \-9tdt = \-\frac{1}{29\frac{1}{2}1 | 81 = 29 B
26 = 29 B = - 06 P | 81 = 27
81 = 27 0 = 00
0 = 27 0 = 00
0 = 00 | 81 = 29
81 = 29 & - 06
0 = 29 & - 06
0 = 20 & 05 & 05 & 05 & 05 & 05 & 05 & 05 & | 81 = 29
81 = 29 6
20 = 27 6 = 06
0 = 00 = 00 = 00 = 00 = 00 = 00 = 00 = | 81 = 29
81 = 29 0
10 = 29 0 = 00
0 = 29 0 = 000 | $\frac{6}{450} = 300 = \frac{2}{5}$ Then $\frac{2}{5} = \frac{2}{5} = \frac{2}{5} = \frac{2}{5}$ $\frac{6}{5} = \frac{2}{5} = \frac{2}{5} = \frac{2}{5} = \frac{2}{5}$ $\frac{6}{5} = \frac{2}{5} = \frac{2}{5} = \frac{2}{5} = \frac{2}{5} = \frac{2}{5}$ $\frac{6}{5} = \frac{2}{5} = $ |
| 17 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | 17 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | - 34 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | 17 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | - 34 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | 7= 3= -9t dt y= 1-9t dt y= 1-29t dt | 17 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - | 7= \-\frac{1}{246} \frac{1}{24} | 1 = \-\frac{1}{4} \frac{1}{4} | y= \-9tdt = -\frac{1}{29tdt} = - | 1 = \-9tdt
-2465-06=6
-302-59(0)+64
 | $\omega \sim \omega$ | | | | 0100100100101 | $\frac{1}{400} = \frac{1}{2} = 0$ $\frac{1}{2} = \frac{180}{2}$ |
| \\ \(\) = \\ \\ \\ \ \ \ \ \ \ \ \ \ \ \ \ \ | : 3= -9t dt y= \-9t dt = \-\frac{1}{2}\fra | y= \-9tdt y= \-9tdt y= \-9tdt -\frac{1}{2}\frac{1}{ | 7= 3-9t dt
y= 1-9t dt
= -\frac{1}{2} \frac{1}{2} \fr | y= \-9tdt
y=\-\frac{1}{9}1 | y= \-9tdt y=\-18t3+C4 -240\-290 -36-296 -42- | y= \-9tdt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
 | 7= 1-9t dt
- 24 6 | y= \-9tdt -\frac{1}{2}\frac{1}{2 | 7= 3-9tdt = -\frac{1}{2}\frac{1} | y= \-9tdt
-\frac{1}{2964+C4} -\frac{1}{2964+ | 81 = 27
81 = 27 67
0 = 27 67 - | 81 = 27
81 = 27 0 = 2
26 = 27 0 = 2
20 = 27 0 = 2 | 81 = 29
81 = 29 67
26 = 29 67
0 = 29 67
 | 81 = 29
81 = 29 67
26 = 27 67
0 = 27 67 | 81 = 29
26 = 29 07
0 = 27 07 = 0 | $\frac{1}{400} = \frac{1}{2} = 0$ $\frac{1}{2} = \frac{180}{2}$ $\frac{180}{2} = \frac{180}{2}$
 |
| .: \\ \(\) = \\ \\ \\ \= \\ \\ \\ \\ \\ \\ \\ \\ \ | : 4= 1-9t dt y= 1-9t dt = -1-9t dt = -1 | y= \-9tdt y=\\\\-\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= }-9tdt y= }-9tdt y= }-9tdt | y= \-9tdt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt y=\-9tdt =\-\frac{1}{2}\text{gt.}7C4 \text{wkn t=0} y=90 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt | y = \-9tdt = -\frac{1}{2864C4} when t=0, y=90 :90=-\frac{1}{2964C4} :4=-\frac{1}{2964C4C4} :4=-\frac{1}{2964C4} | y= \-9tdt = -\frac{1}{2}\frac{1} | y= \-9tdt = \frac{1}{286.7C4} when t= 0, y= 90 : 90= \frac{1}{296.7C4} : 4=\frac{1}{296.7C4} : y=\frac{1}{296.7C4} The ball shikes | 24622
- 29622
- 20622 | 10 t2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | = 24 0 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 10 t2 7 | 10 t2 2
10 t2 2 | $\frac{6}{100} = \frac{100}{2}$ |
| : 4= 3-9tdt y= 1-29tdt | : 4= 1-9t dt y= 1-9t dt y= 1-19t dt | y= \-9t dt y= \-9t dt y= \-9t dt \\ \= \-\frac{1}{2}\text{9}\text{6}\text{7}\text{7}\text{6}\text{7}\text{7}\text{9}\text{7}\text{7}\text{9}\text{7}\text{7}\text{9}\text{7}\text{7}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{7}\text{9}\text{9}\text{7}\text{9}9 | y= \-9tdt y= \-9tdt y= \-9tdt = \-\frac{1}{9}\fo\fo\fo\fo\fo\fo\fo\fo\fo\fo\fo\fo\fo\ | y= \-9t dt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt y=\-9tdt -\frac{1}{9}\forall \forall \fora | y= \-9tdt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt | الله الله الله الله على الله الله الله عالم الله ع
الله الله الله الله الله الله الله عالم الله الله الله الله الله الله الله ا | y= \-9tdt = \-\frac{1}{9t^2+C4} when t=0, y=90 \:\frac{1}{29}\(\frac{1}{2}\)\frac{1}{2}\(\frac{1}{2}\) \:\frac{1}{2}\(\frac{1}{2}\)\frac{1}{2}\(\frac{1}{2}\)\frac{1}{2}\(\frac{1}{2}\) \:\frac{1}{2}\(\frac{1}{2}\)\frac{1}\(\frac{1}{2}\)\frac{1}{2}\(\ | y= \-9tdt = \frac{1}{96} \frac{1}{10} \frac | - 10 t2 = 10 t2 = 10 t2 = 1 | =240
=270
=270
=270
==270
================= | = 24
= 240
= 270 = = | 22 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 2.3 Por 2.3 Po | $\frac{6}{2} = 300$ $\frac{2}{2} = 300$ $\frac{2}{2} = 20 \times 6$ $\frac{2}{2} = 20 \times 6$ $\frac{2}{2} = 20$ $\frac{2}{2} =$ |
| : 4= -9t dt y= \ -9t dt = -\frac{1}{2}\fra | : G=0
: y= -9tdt
y= \-9tdt
= -\frac{1}{2} | : 3= -9t
y= \-9tdt
y= \-9tdt
-90= \frac{1}{2} \frac | y= \-9tdt y=\-9tdt \frac{1}{2}\frac{1}{2 | y= \-9tdt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt y=\-9tdt ==\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt = \-\frac{1}{9t} \frac{1}{9t} \fr | y= \-9tdt = \frac{1}{29t} \fr | y= \-9tdt = \frac{1}{9} \frac{1}{9} \frac{1}{1} \frac{1}{9} \frac{1}{1} \frac{1} \frac{1}{1} \frac{1}{1} \frac{1}{1} \frac{1}{1} \frac{1} | y= \-9tdt = \frac{1}{9t^2+C4} = \frac{1}{29} \frac{1}{2} \frac{1} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2 | y= \-9tdt = \frac{1}{9t^2 + C4} when t= 0 y= 90 : 90 = \frac{1}{2}9(0)^2 + C4 : C4 = 90 - \frac{1}{2}9t^2 The ball strikes | 240
270
270
270
270
270
270
270
270 | - 24 62 | - 29 t2 - 20 t2 - 20 t2 - 2 | - 20 t2 - 20 t2 - 20 t2 - 2 | - 20 t2 20 t2 | $\frac{1}{200} = \frac{1}{200}$ $\frac{1}{200} = \frac{1}{200}$ $\frac{1}{200} = \frac{180}{200}$ |
| : 4= 3-9t dt y= 3-9t dt y= 1-9t dt | : 4= 9-29 to dt y= 1-9 to dt y= 1-9 to dt y= 1-29 to 4-40 : 4= -29 (0) + 64 : 64 = 90 - 29 to 2 The ball shikes | y= 3-9t dt y= 3-19t dt y= 1-19t dt | y= \-9tdt y=\-19tdt y=\-19tdt =\-\frac{1}{9}\cdt \delta =\-\frac{1}{9}\cdt \delta =\-\frac{1}{9}\cdt \delta + C4 \delta \delta =\-\frac{1}{9}\cdt \delta + C4 \delta \delta \delta \delta + C4 \delta \de | y= \-9tdt y=\-\frac{1}{9}tdt =\-\frac{1}{9}t\c4 \delta = \frac{1}{9}t\c4 \delta = \frac{1}{9 | y= \-9tdt y=\-9tdt = -\frac{1}{2}86404 when t=0, y=90 : 90=-\frac{1}{2}90404 : 64=90 y=\-\frac{1}{2}964190 The ball shikes | y= \-9tdt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-gtdt = -\frac{1}{2}\forall \forall \fora | y= \-9tdt = \frac{1}{2} \frac | y= \-gtdt = -\frac{1}{2}\frac{1}{ | y= \-9tdt = \frac{1}{2}\text{gt.} + C4 = \frac{1}{2}\text{gt.} + | 27042 | 120 t 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | = 29
= 27 0 = -
= 27 0 = - | 12 4 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 2.27 0 42 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | $\frac{1}{2} \frac{1}{2} \frac{1}{2} = 0$ $\frac{1}{2} \frac{1}$ |
| : 3= -9t dt y= 1-9t dt y= 1-9t dt = -\frac{1}{2}\fra | : 4= 1-9t dt y= 1-9t dt y= 1-9t dt = -\frac{1}{2}\frac{1}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2} | y= 5-9tdt y= 5-9tdt | y= \-9tdt y=\-9tdt =\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tdt y=\-9tdt =\-\frac{1}{2}\text{gt.} + C4 \[\frac{1}{2}\text{gt.} + C4 \] \[\frac{1}\text{gt.} | y= \-9tdt y=\-\frac{1}{29tdt} \\\ \=\frac{1}{29tdt} \\ \\\ \=\frac{1}{29tdt} \\ \\ \\\ \\ \\\ \\\ \\\ \\\ \\\ \\\ | y= \-9tdt = \-9tdt = \-\frac{1}{9}\frac{1} | y= \-9tdt -\frac{1}{2} | y= \-9tdt = -\frac{1}{2}\text{gt.} + C4 when t= 0 y= 90 : C4=90 : C4=90 - y=-\frac{1}{2}\text{t.} + C4 The ball shikes | y= \-9tdt = -\frac{1}{29\frac{1}{2} + C4} = -\frac{1}{29\frac{1} | 270
270
270
270
270
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22 | = 27 0 = = = = = = = = = = = = = = = = = = | 2,4 6,2 2, 2, 2, 4, 2, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 2, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, | = 24 Por = = 27 Por = = = = = = = = = = = = = = = = = = = | - 20 t2 - 20 t2 - 20 t2 - 2 | $\frac{6}{2} = 300$ $\frac{6}{2} = 30$ |
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 | $t = 6 \frac{5}{4}$ when $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $\frac{5}{4} = \frac{5}{4}$ $\frac{5}{4} = \frac{5}{4}$ $\frac{5}{4} = \frac{5}{4}$ $\frac{5}{4} = \frac{5}{4}$ |
| 18 = 29 - 20 t of t o | 35 = 18
3 = 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 | : 3= -9t dt y= \-9t dt y= \-9t dt \\ \= \-\frac{18}{29} \\ \cho \\ \\ \= \-\frac{18}{29} \\ \cho \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 18 = 18 -9t dt -9 | y= }-9tdt y= ∫-9tdt | 18 = 20 - 20 tolt - 20 = - 20 tolt - 20 = - 20 tolt - 20 = - 20 tolt - 20 | y= \-9tdt y= \-9tdt -\frac{18}{962+C4} \[\frac{1}{20} = \frac{1}{29} \\ \frac{1}{20} \\ \frac{1}{20} = \frac{1}{29} \\ \frac{1}{20} = \frac{1}{20} \\ \ | 18 = 2-9 to dt = 18 | y= \-9tdt -\frac{18}{96^2 + C4} \[\frac{1}{20} = \frac{1}{2} \f | 18 = 2-4 tot
- 20 = - 20 tot
- 20 | y= \-9tdt -\frac{18}{96.7} = \frac{18}{18} \\ \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | | | | | $\frac{6}{5} = \frac{20}{5}$ $\frac{2}{5} = \frac{20}{5}$ |
| 24 = 29 = 20 = 29 = 20 = 29 = 20 = 20 = 20 | 24 = 29 = 20 = 20 = 20 = 20 = 20 = 20 = 20 | 3 - 3 - 9 t dt y = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 81 = 29
81 = 29
81 = 29
81 = 29
10 = 20
10 | y= ∫-9tdt
y= ∫-9tdt
- 100 - 19t-90
- 100 - 100 - 100
- | 18 = 29 = 28 = 28 = 28 = 28 = 28 = 28 = 2 | 18 = 2 = 18 = 18 = 18 = 18 = 18 = 18 = 1 | 120 = 29 & = 18
120 = 29 & = 20
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| : 4= 3-9t dt y= 1-9t dt y= 1-19t dt | : 4= 3-9t dt y= 1-29t dt | 18 = 18 18 18 18 18 18 18 | 18 = 1-9 t dt = 1-9 t dt
= 1-9 t dt = | 18 = 18 18 18 18 18 18 18 | y= ∫-9tdt
y= ∫-9tdt
 | 18 = 18 18 18 18 18 18 18
 | The ball shikes 190- 196-196-196-196-196-196-196-196-196-196- | 18 = 18 -9t dt 18 18 18 18 18 18 18 1 | y= }-9tdt
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 | | |
 | $\frac{1}{2} = \frac{136 \times 1}{2}$ $\frac{1}{2} = \frac{136 \times 1}{2} = 136 \times $ |
| : 32 -9t
- 36 - 59t - 20
- 30 - 50 - 20
- 30 - 20 | : 32 -9¢
- 36 - 29¢ - 20
- 30 - 20 | .: \\ \(\frac{12}{2} = \frac{18}{2} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 120 | 18 = 18 (0) 4 = 18 (0) | 18 = 18 18 18 18 18 18 18 | y= \-9tdt y= \-9tdt -\frac{18}{96^2 + C4} \\ \frac{1}{2} \frac | 18 = 29 (0) + C4 = 18 (0) + C4 = 18 (0) + C4 = 90 (0) + C4 | 18 = 19 = 18 = 18 = 18 = 18 = 18 = 18 = | 120 - 19 tot 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 | y= \-9tdt -\frac{18}{96.70} -\frac{18}{96.70} -\frac{1}{96.70} -\frace{1}{96.70} -\frac{1}{96.70} -\frac{1}{96.70} -\frac{1}{96.70} | 4 | 4 | 4 | 4 | 4 | $\frac{1}{2} = \frac{136 \times 15}{420}$ |
| 1 = 3 = 9 t dt 3 = -3 t dt 4 = -3 t dt 4 = -3 t dt 5 = -3 t dt 6 = -3 t dt 6 = -3 t dt 7 = -3 t dt | .: 4= -9t dt
 | 11 = 2 = 2 = 1 = 2 = 1 = 2 = 1 = 2 = 2 = | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | 1 = 2 = 2 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 1 = \frac{1}{2} | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | 1 = \ -9t dt \(\frac{1}{2} = \frac{1}{2} \\ \(\frac{1}{2} = | A = 2 - 2 f of t = 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 1 = 3-9tdt | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | <u>'</u> | 14 | 14 | 14 | 14 | $\frac{1}{2} = \frac{136 \times \frac{1}{2}}{1200} = \frac{1}{2}$ Then $\frac{1}{2} = \frac{1}{2} = 1$ |
| | : 4= -36
: 4= -29645
: 40= - | 11 = 29
21 = 29
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20 = 20 | y= ∫-9tdt y= ∫-9tdt | 11 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | The ball strikes 120 - 1964-64 1420 - 1962-696 190-1962 | 1) = = = = = = = = = = = = = = = = = = = | y= ∫-9tdt | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | | <u> </u> | 14 | 14 | 14 | $\frac{-\sqrt{36} \times \sqrt{5}}{2} (t70, t)$ $\frac{1}{2} = 6\sqrt{5}$ |
| 1 = 2 = 2 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 1 = 2 = 2 = 1 = 2 = 1 = 2 = 2 = 2 = 2 = | | 1 = 2 = 2 = 1 = 2 = 2 = 2 = 2 = 2 = 2 =
 | y= ∫-9tdt y= ∫-9tdt | 1 = 2 = 2 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | y= 5-9tdt
y= 5-9tdt
: 90= - 296+C4
: 420 - 2962+C4
- 420 - 2962-90
- 90- 2962-90
- 190- 2962-90
- 190- 2962-90
- 1962-90
-
 | 1 = 2-9 t dt = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | y= \-9tdt -\frac{1}{2}\frac{1}{2 | 1 = 2 = 2 = 1 = 2 = 2 = 2 = 2 = 2 = 2 = | y= \-9tdt
-\frac{1}{2}\frac{1}{2 | 14 | 14
 | 14 | 14 | 14
 | $\frac{1}{4} = 6 \frac{5}{4}$ $\frac{1}{2} = \frac{136 \times 5}{4}$ $\frac{1}{2} = \frac{136 \times 5}{4}$ $\frac{1}{2} = \frac{136 \times 5}{4}$ $\frac{1}{2} = \frac{136 \times 5}{4} = \frac{136 \times 5}{4}$ |
| .: $\dot{y} = -9t$ $y = \int -9t dt$ $y = -\frac{1}{2}9t dt$ $y = -\frac{1}$ | : 4= 1-9t dt y= 1-9t dt = 18 | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =
 | | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =
 | The ball shikes 100 - 2964 - 296 100 - 2962 - 2962 100 - 2962 - 296 | 1 = 2 = 4 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | The pall ships - 18 | 1 = 2 = 4
2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =
 | 14 | 14 | 14
 | 14 | 14
 | $\frac{1}{2} = \frac{136 \times 12}{2}$ Then $\frac{1}{2} = \frac{136 \times 12}{2}$ $\frac{1}{2} = \frac{136 \times 12}{2}$ $\frac{1}{2} = \frac{136 \times 12}{2} = 136 \times 1$ |
| | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | 1 = 2 = 2 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 120 - 19 tot
120 - 19 tot
12 | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 =
 | 15 = 2 = 3 = 3 = 3 = 3 = 3 = 3 = 3 = 3 = 3 | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 =
 | The pall strikes - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 20 - 24 - 24 - 20 - | 1 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | The pall strikes 120 - 1964-64 1420 - 196-196 190-196-196 190-196-20 190- | The pall shikes. - 18
 | 14 | 14 | 14
 | 14 | 14
 | $\frac{-\sqrt{36} \times \sqrt{5}}{4 + 6\sqrt{5}}$ when $t = 6\sqrt{5}$ $\frac{5}{4}$ $\frac{5}{4}$ $\frac{5}{4}$ $\frac{5}{4}$ $\frac{5}{4}$ |
| 1 = = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | 1 = = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | | 1 = 2 = 2 = 1 = 2 = 2 = 2 = 2 = 2 = 2 =
 | y= ∫-9tdt y= ∫-9tdt | 1 = = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | y= ∫-9tdt

 | 1 = = = = = = = = = = = = = = = = = = = | y= \-9tdt -\frac{1}{2}\frac{1}{2 | 1 = = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1
 | y= ∫-9tdt
- 18 ± 19 (0) + 1 C4
- 19 5 - 19 6 + 1 C4
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- 19 6 2 - 19 6 2 - 90
- 19 6 2 - | 14 | 14
 | 14 | 14 | 11
 | $\frac{1}{4} = 6 \frac{5}{4}$ When $\frac{1}{4} = 6 \frac{5}{4}$ $\frac{1}{2} = \frac{1}{2} = \frac{1}{$ |
| : 4= -9t dt y= 1-9t dt y= -\frac{1}{29t \cd} \[\frac{1}{20} = \frac{1}{29} \\ \frac{1}{20} \\ \frac{1}{20} = \frac{1}{20} \\ \frac{1}{20} \\ \frac{1}{20} = \frac{1}{20} \\ \frac{1}{2 | : 4= -9t dt y= \-9t dt y= \-9t dt \: 40 = -\frac{1}{2}\text{60}\text{70} \: 40 = -\frac{1}{2}\text{60}\text{70} \: 40 = \frac{1}{2}\text{9}\text{70} \: 40 - \frac{1}{2}\text{9}\text{70} \] The ball shikes \[\frac{1}{2}\text{9}\text{12}=0 \] \[\frac{1}{2}\text{12}\text{12}=0 \] \[\frac{1}{2}\text{12}\text{12}=0 \ | 15 = 4
15 = 4
16 = 4 | 1 = 1 = 9 t dt y = 1 = 9 t dt y = 1 = 9 t dt y = - \frac{1}{2} \text{ for } \text{ for } \frac{1}{2} \text{ for } \text{ for } \frac{1}{2} \text{ for } \text{ for } \frac{1}{2} \text{ for } \text{ for } \text{ for } \t | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | y= \-9tdt y= \-9tdt y= \-9tdt -\frac{1}{9}\frac{6}{1}\frac{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac{1}\frac | 1 = -3 = -9 t dt = -1 = -9 t dt = -2 = -2 = -2 = -9 t dt = -2 = -2 = -2 = -2 = -2 = -2 = -2 = - | J= \-9tdt | 1 = 2 = 2 = 18 3 = 19 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 10 1 = 10 | y= \-9tdt -\frac{1}{9td} -\f | 1 = 2-9 to dt = 10 | 14 | 14 | 14 | 14 | 14 | $\frac{1}{2} = \frac{136 \times 15}{2}$ when $\frac{1}{2} = 6 \times 15$ $\frac{1}{2} = \frac{136 \times 15}{2} = 136 \times 15$ |
| 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | 1. 3= -9t dt y= 1-29t dt | 1 = 3 = 9 t dt = 3 = 18 | 1. $\dot{y} = -9t$ $\dot{y} = \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{18}{2} = \frac{18}{2} = \frac{18}{2} = \frac{1}{2} $ | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 1 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | 1 = 2 - 9 t dt - 2 - 2 9 t 2 - 18 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 2 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 3 - 2 9 t 2 - 20 - 4 - 2 9 t 2 - 20 - 5 - 2 9 | 1 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | The pall shikes - = 20 - 50 fc = 0 - = 20 fc | 14 | 14 | 14 | | | $\frac{1}{2} = \frac{1}{2} = \frac{1}$ |
| 1 = = 4
81 = 24
81 = 24
81 = 24
81 = 24
82 = 24
10 | 1 = = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | y= }-9tdt y= }-9tdt
 | 1 = = = = = = = = = = = = = = = = = = = | y= ∫-9tdt

 | 7 = 2 = 2 = 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 | y= \-9tdt -\frac{1}{2}\\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 7 = 2 = 2 = 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 | y= ∫-9tdt
- 102 - 1964-64
- 102 - 1964-64
- 120 - 1962-90
- 120 -
120 - | 1 180 | 1 180 | 1 180
 | 1 180 | 1 180
 | mpor f= 6/2
- 300 /2
- 300 /2
- 300 /2
- 4 - 6/2
- 4 - 6/2 |
| .: \\ \(\frac{1}{2} = \frac{1}{2} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | : G=0 : y= -9tdt y= \-9tdt | 12 - 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + | 120 - 19 tolt
 | 12 - 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + | y= ∫-9t dt y= ∫-9t dt | 12 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -
 | The ball shikes 120 - 1964-40 190 - 196-196 190 - 196-296 190 - 196-296 190 - 196-20 190 - 190 - 196-20 190 - 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 190 - 190 - 190 1 | 120 - 19 tot 1 | y= \-9tdt when t=0, y=90 \(\frac{1}{2}\) \(\ | 12 = 13 1 1 1 1 1 1 1 1 1
 | 12 12 12 12 12 12 12 12 12 12 12 12 12 1 | 12 1 2 1 20 1 2 1 2 1 2 1 2 1 2 1 2 1 2 | 136 (2)
 | 12/2 (5 (+20)
12/2 (5 (+20)) | 126 (+ 20)
 | $\frac{50 \times 6\sqrt{2}}{50 \times 6\sqrt{2}}$ $\frac{50 \times 6\sqrt{2}}{50 \times 6\sqrt{2}}$ |
| - 136×
- 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 | - 136×
- 18 = 18 = 18 = 18 = 18 = 18 = 18 = 18 | $\dot{y} = -9t$ $y = \int -9t dt$ $y = \int -9t dt$ $y = -\frac{1}{2}9t^2 - 9t$ $y = -\frac{1}{2}9t^2 - 9$ | - 136×
- 13 - 9t dt
- 18 - 18 - 18 - 18 - 18 - 18 - 18 - 18 | - 136x | - 136x
- 12 - 24
- 18 - 24 - 20
- 24 - 20 - 24 - 20
- 24 24 - 20 | - 136x | 7 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | - 136x
- 136x | 7 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | y= \-9tdt - \\\\ \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 36× 5 (\$70. | 36× (2 (470) | 136× 5 (\$70. | 136× 15 (\$70. | 136× 5 (\$70. | mber 4= 6/2
- 300 /2
- 300 /2
1 = 6/2
V9 |
| 29 = 29 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | - 136x | 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | y= \-9tdt y= \-9tdt -\frac{18}{29} \\ \frac{1}{20} \\ \frac | - 136x
- 13 - 9t dt
- 19 - 19 + 104
- | y= \-9tolt y= \-9tolt \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 7 = 2 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | y= \-9tdt -\frac{1}{20} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 7 = 2 = 2 = 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 | y= \$-9tdt
- 1903 - 190 + 104
- 1903 - 1903 - 106
- 1 | 136× (\$ (\$70, | 136× (\$ (\$70, | 136× (\$ (\$70) | 136× (\$ (\$70, | 136× (\$ (+70, | $\frac{6}{5} = 300 = \frac{2}{5}$ $\frac{7}{5} = 300 = \frac{2}{5}$ |
| : 36x - 36x | : G=0 : y= -9t y= \-9tdt y= \-9tdt = \-9tdt = \-9t\-9t\-9t\-9t\-9t\-9t\-9t\-9t\-9t\-9t | - 136x
 | - 136x | - 136x

 | - 136x | 7 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | J= \-9tdt
 | The ball shikes - 136x + C4 - 190 - 196x + C4 - 190 - 196x - 20 - 190 - 190x - 20 | y= \-9tdt | 7 = 2 = 2 = 136 × 136 × 136 × 136 × 136 × 15 = 15 = 15 = 15 = 15 = 15 = 15 = 15 | 136× \$ (\$70,
 | 136× \$ (\$20, | 136× \$ (t20) | 136× 5 (+20,
 | 136× 5 (t20, | when $t = 6\sqrt{3}$ $x = 50 \times 6\sqrt{3}$ $\frac{5}{3}$
 |
| : 4= -9t
 | : G=0
: y= -9tdt
- 105 - 19tdt
: 420 - 19t2 - 18
- 19t2 - 19t | 17 = 29 = 136 × 13 | y= 1-9t dt y= 1-9t dt y= 1-29t dt | 17 = 24
31 = 24
31 = 24
32 = 24
32 = 24
32 = 24
32 = 24
32 = 24
34 | y= ∫-9t dt y= ∫-9t dt - 1963- 1963 + C4 - 1963- 1963- 1963- 1963- 1963 + C4 - 1963- 1963- 1963- 1963- 1963- 1963 + C4 - 1963- 1963- 1963- 1963- 1963 + C4 - 1963- 1963- 1963- 1963- 1963- 1963 + C4 - 1963- 1963- 1963- 1963- 1963 + C4 - 1963- 1963- 1963- 1963- 1963- 1963 + C4 - 1963- 1963- 1963- 1963- 1963- 1963- 1963- 1963 + C4 - 1963- 1 | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | J= \-9tdt | The pall shikes - 136x - 16x | - 136x y = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | The pall shikes - 136x - 190 - 196x + C4 - 1 | 36× 5 (+20, | 36 × 35 (\$70) | 136× 5 (+70, | 136× 5 (+70, | 136× \$ (+70, | $\frac{1}{2} = \frac{1}{2}$ |
| $\dot{y} = -9t$ $\dot{y} = -9t$ $\dot{y} = -9t$ $\dot{y} = -\frac{1}{2}9t^2 + C_4$ $\dot{y} = $ | $\dot{y} = -9t$ $\dot{y} = -9t$ $\dot{y} = -9t$ $\dot{y} = -\frac{1}{2}9t^2 + C_4$ $\dot{y} = $ | - 36x - 136x | - 136x | - 36x
- 36x
- 36x
- 29 (0) 4 C4
- 20 (0) 4 C4
- 20 (0) 4 C4
- 20 (0) 4 C4 | - 136x
- 136x
- 136x
- 186x
- 186x | y= \-9tdt y= \-9tdt = \-\frac{1}{9t^2+C_4} \[\frac{1}{20} = \frac{1}{2} \\ \frac{1} \\ \frac{1} \\ \frac{1}{2} \\ \frac{1} \\ \frac{1}{2} \\ \frac{1}{2} \\ \frac{1}{2} | The pall shikes. | y= \-9tdt = \frac{1}{2}\frac{1}{ | - 136x y= \ -9tdt - \ 10 = -\frac{1}{2} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | y= \-9tdt = \frac{1}{9t^2+C_4} = \frac{1}{9t^2+Q_0} \frac{1}{30} = \frac{1}{9} \frac{1}{9} \frac{1}{1} \frac{1} \frac{1}{1} \frac{1} \frac{1}{1} \frac{1} \frac{1}{1} \frac{1}{1} \frac{1}{1} \frac | 136× (\$ (\$70) | 136× (\$ (\$70) | 136× (\$ (\$70) | 136× 180
(\$20, | 136× 180
(470, | $t = 6 \frac{5}{4}$ when $t = 6 \frac{5}{4}$ $= 300 \frac{5}{4}$ |
| - 136x
- 13 = -3 = -3 = -3 = -3 = -3 = -3 = -3 | - 136x - 136 - 15 - 9t dt - 196 - | - 136x | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 =
 | y= \-9tdt
y= \-9tdt
-\frac{1}{2}\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | - 136x | y= ∫-9tdt
- 136x
- 136x
- 140x
- 190x
- | The pall shikes - 136x - 1964-64 -
1964-60 - 1965-6 | y= \-9tdt -\frac{1}{9t^2+C_4} -\frac{1}{9t^2+Q_0} -\frac{1}{9t^2-Q_0} -\frac{1}{9t^2-Q_0} -\frac{1}{9t^2-Q_0} -\frac{1}{29t^2-Q_0} -\frac{1}{29t^2- | The pall shikes - 136x - 1964-64 - 1964-60 - 196- 1964-64 - 1964-90 - 1 | y= \-9tdt
- \\ - \\ - \\ - \\ - \\ - \\ - \\ - \ | 136× (\$ (\$ >0)
 | 136× (\$ (\$70, | 136× (\$ (\$ 70)
 | 136× (\$ (+70) | 136× (\$ (\$70, | mbor f= 6/2
2= 50×6/2
1= 300/2
 |
| : 36x - 36x | : 4= 1-9tdt y= 1-9tdt | - 136x | - 136x | - 136x
- 136x | y= \-9tdt y= \-9tdt -\frac{1}{9t^2+C_4} \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | 7 = 2 = 2 = 136 × 1 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = 2 = | y= \-9tdt | 7 = - 136x
- 136 = - 10
- 10 = - 10 = - 10 | y= \-9tdt | 7 = - 136x
- 136x - 20
- 20 = | 136× (\$ (\$70) | 136× (\$ (\$20) | 136× 180
136× 180 | 136× (\$ (\$70, | 136× (\$ (t20) | $\frac{50 \times 6}{5}$ |
| : 4= -9t dt y= 1-9t dt y= -1-9t dt | : 4= -9t dt y= \-9t dt y= \-9t dt \: 40 = -\frac{1}{2}962+C4 \: 420 - \frac{1}{2}962+C4 \] The ball shikes \[\frac{1}{2}0 - \frac{1}{2}962 \] \[\frac{1}{2}0 - \frac{1}2962 \] \[\frac{1}{2}0 - \frac{1}{2}962 \] \[\frac{1}{2}0 - \frac{1}{2}962 | - 136x
- 136x | - 136x | - 136x
- 136x | - 136x | - 136x
- 136x | y= \-9tdt | - 136x
- 136x | y= \$-9tdt - 19t 4 C4 - 19t 2 - 19t 4 C4 - 19t 2 - 19t 2 - 18t 2 - | - 136x
- 136x | 36× (5 (+20, 180) | 36× (\$ (\$70) | 136× (\$ (+70) | 136× (\$ (\$20) | 136× 180
136× 180 | men t= 6/2
= 300 \ 5 |
| - 136x
- 136x | - 136x
- 136x | $\dot{y} = -9t$ $y = \int -9t dt$ $y = \int -\frac{1}{2} \frac{18}{2} \frac{1}{2} \frac{18}{2} \frac{1}{2} $ | 136x
y= 1-9t dt
y= -19t dt
 | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 7 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | - 136x | 7 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | - 136x
- 136x | - 136x | 136× (\$ (\$70) |)= ± \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 36× (\$ (t>0, | 136× (\$ (\$70) |)== 1 180
(470, | when t= 6/2
= 300 / 5 |
| : 36 = -9t
- 36 = -9t
- 36 = -9t
- 36 = -596
- 36 = -9t
- | $\dot{y} = -9t$ $\dot{y} = -9t$ $\dot{y} = -9t$ $\dot{y} = -\frac{1}{2}9t^2 + C_4$ $\dot{y} = $ | : 36x
y= -9t dt
y= -19t dt
-19t dt
-19t dt
-19t de
-19t de | 1 = -36 × - 36 × | - 36x
- 36x
- 36x
- 29 (0) 4 C4
- 20 (0) 4 C4
- 20 (0) 4 C4
- 20 (0) 4 C4 | - 36x
- | y= \-9tdt y= \-9tdt -\frac{1}{9t^2+C_4} \text{-\frac{1}{2}\text{-\frac{1}\text{-\frac{1}{2}\text{-\frac{1}{2}\text{-\frac{1}{2}-\ | The pall shikes - 136x - 136x - 186x - 186 | y= \-9tdt -\frac{1}{9t^2-9t} -\frac{1}{36x} -\frac{1}{36x} -\frac{1}{36x} | - 136x
- 136x | y= \-9tdt -\frac{1}{9t^2+C_4} -\frac{1}{9t^2+Q_0} -\frac{1}{2}\ | = 136× (\$ (\$70) | F== 136× (\$ (+20, | t== \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | t== 136× (\$ (\$70) | F== \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \ | when t= 6/3, |
| - 136x
- 136x | - 136x | - 136x | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | y= \-9tdt
y= \-9tdt
-\frac{1}{2}\forall \forall \fo | - 136x | - 136x | The pall ships - 136x | y= ∫-9tdt
- 186+C4
- 1902-196+C4
- 1902-1962-90
- 190-1962-90
- 1962-90
- 1962-90 | - 136x
- 136x | y= ∫-9tdt
- 136×
- | = 136× (\$ (\$70) | = 136× (\$ (\$20, | F== 136 × (\$ (\$ >0) | = 136× (\$ (\$70, | t== \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 2 300 \2
300 \2
0 × 6 \2
0 × 6 \2 |
| .: $\dot{y} = -9t$.: $\dot{y} = -9t$.: $\dot{y} = -\frac{1}{2}9t$.: $\dot{y} = -\frac{1}{2}9$ | .: $\dot{y} = -9t$ $y = \int -9t dt$ $y = -\frac{1}{2}9t^2 - 9t$ $y = -\frac{1}{$ | 1 2 - 2 t - | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 7 = 136x
- 13 | - 136x | 7 = 2 = 136x y = 2 = 12 = 12 | J= \-9tdt | 7 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - | - 136x | 7 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - | = 136× (\$ (\$70, | = 136× (\$ (\$20) | = 136× (\$ (\$70) | t== 136× (\$ (\$70, | t== \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | mpor t= 6/2
2 300 (2
8 0 × 6 (2) |
| : 4= -9t dt y= 1-9t dt y= -19t dt -190 - 19t - 19 -19t - 19 -136 x -136 x -136 x | : G=0
: y= \-9tdt
y=\frac{1}{9}t^2+C4
: \frac{1}{2} = \frac{1}{9}t^2+C4
\frac{1}{2} = \frac{1}{9}t^2+C4
\frac{1}{2} = \frac{1}{2} = \frac | 196-1964
 | - 136x | 19 = 136x - 1 | - 136x | 120 - 136x - 136x The ball shikes 120 - 130 + 124 - 90 130 - 130 + 124 - 90 130 - 130 + 124 - 90 136 - 136 + 124 - 90 136 - 13 | - 136x | 1 = 6 = 5 = 6 = 5 = 6 = 6 = 6 = 6 = 6 = 6 | - 136x - 1-6 tolt | - 136x | = 615
= 136× (\$ (\$70, | = 615
- 136× (\$ (+20)
- 136× (\$ (+20) | = 615
= 136× (\$ (\$70) | t== 136× (\$ (t>0) | = 615
- 136× (\$ (+70) | when t= 6/5
= 300 /5 |
| = 136x
- 136x | = 136×
- 36= 1
- 36 | : 4= -9t dt y= 1-9t dt y= 1-9t dt | 1 = 1 = 6 5 - 36 × - 37 × - 36 × - 37 × - 37 × - 37 × - 37 × - 37 × - 37 × - 37 × - 37 × - | $\dot{y} = -9t$ $y = \int -9t dt$ $y = \int -9t dt$ $y = -\frac{1}{2}9(0)^{\frac{1}{2}} + C_{4}$ $(4 = 90)$ $y = -\frac{1}{2}9t^{2} + 90$ $y = -\frac{1}{2}9t^{2} + 190$ $y = -\frac{1}{2}9t^{2} + 19$ | = 136x
- 136x | y= \-9tolt y= \-9tolt \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 7 = 6 5
- 36 = 4
- 36 = 2
- 36 = | y= \-9tdt = \frac{1}{9t} \\ \frac{1}{20} \\ \ | 7 = 2 = 4 = 6 5 - 36x - 29 (0) 2 + C4 - 29 - 29 6 2 - 20 - 29 6 | y= \-9tdt -\frac{1}{9t^2+C_4} -\frac{1}{9t^2+C_4} -\frac{1}{9t^2-90} -\frac{1}{9t^2-90} -\frac{1}{9t^2-9t} -\frac{1}{9t^2-9t} -\frac{1}{9t^2-9t} -\frac{1}{9t^2-9t} -\frac{1}{36} \frac{1}{5} -\frac{1}{36} \frac{1}{5} -\frac{1}{36} -\frac{1}{36} -\frac{1}{36} -\frac{1}{36} -\frac{1}{36} -\frac{1}{36} | = 6 5
= 6 5 | = 6 5
- 136 × 180
- 136 × 180
- 136 × 180 | = 6 5
- 136× (\$ (\$70) | = 65
- 136× 5 (+20, | = 6 5
- 136× 5 (+20, | when $t = 6 \frac{5}{9}$ |
| .: $\dot{y} = -9t$.: $\dot{y} = -9t$.: $\dot{y} = -9t$.: $\dot{y} = -\frac{1}{2}9t$.: | : 36x
- | 7 = 2 = 4 = 6 = 5 - 36 = - 2 = 6 - 36 = - 2 | 1 = 1 = 6 = 5
- 36 = - 29 t dt
- 36 = - 29 t dt
- 24 t = - 20
- 24 t = - 20 | - 136x
- 136x | - 136x | 7 = 2 = 4
- 2 = 4
- 2 = 2 = 20
- 2 = | J= \-9tdt | 7 = 2 = 4 = 6 = 5 - 36 = - 1 | - 136x
- 136x | 7 = 2 = 4 = 6 = 5 - 36 = - 1 = 6 = 6 - 36 = - 2 = 6 - 36 = 6 - 36 = 6 - 36 = 6 - 36 = 6 - 36 = 6 - 36 = 6 - 36 = 6 - | = 6 5
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A (180)
A (180) | = 6 5
- 136× (\$ (\$20) | = 65
- 136× 5 (+70, | t== 136x \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | t== \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | when t= 6)\$ |
| : 4= -9t
 | : G=0
: G=0
: G=0
: G=1
: | 1. 36 = 9t dt - 136 × - 136 | 120 1 20 1 20 1 20 2 20 2 20 2 20 2 20 | 1 = 6 = 5 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = 6 | - 136x | 1 = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | - 136x | The ball shikes - 136x - 136 | - 136x - 1-6 5 5 5 - 1-6 5 5 - 1-6 5 5 - 1-6 5 5 - 1-6 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 - 1-6 5 | The ball shikes - 136x | = 6 5
= 6 5
= 6 5
= 6 5 | = 6 5
- 136 × 180
- 136 × 180
- 136 × 180
- 136 × 180 | t== 136× (5 (t>0) | t== 136× (\$ (\$70) | = 6 5
- 136× 5 (+20, | when t= 6/5
= 300 \ 5 |
| = 6 5
- 36x
- | = 6 5
= 7 5
= | : 4= -9t dt y= 1-9t dt | 1 = 1 = 6 5 = 9 = 9 = 9 = 9 = 9 = 9 = 9 = 9 = 9 = | = 136×
- 136 | The pall ships - 36x | y= \-9tolt y= \-9tolt \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | The pall shikes - 29 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 | y= \-9tdt = \frac{1}{9t^2 + C_4} = \frac{1}{9t^2 + C_4} = \frac{1}{9t^2 - 9t} = \frac{1}{36x} = \frac{1}{36 | 1 = 2 = 6 5 | y= \-9tdt = \frac{1}{9t^2+C_4} = \frac{1}{90} \frac{1}{100} = \frac{1}{90} \frac{1}{29t^2-90} = \frac{1}{90} \frac{1}{29t^2-90} = \frac{1}{90} \frac{1}{29t^2-90} = \frac{1}{20} \frac{1}{29t^2-90} = \frac{1}{20} \frac{1}{20} \frac{1}{20} = \frac{1}{20} \frac{1}{20} \frac{1}{20} = \frac{1}{20} \frac{1}{20} \frac{1}{20} \frac{1}{20} = \frac{1}{20} \frac{1}{20} \frac{1}{20} \frac{1}{20} = \frac{1}{36} \times = \frac{1}{36} \frac{1}{20} | = 6 5
- 136 × 180
- 136 × 180
- 136 × 180
- 136 × 180 | = 6 5
- 136 × 180
- 136 × 180
- 136 × 180 | = 6 5
- 136× (\$ (\$ 20) | +=== \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | = 65
- 136× (\$ (\$20) | when t= 6)\$
= 300 \\ \frac{2}{3} |
| 1 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = | : 36x - 36x - 36x - 59 (0) 2 - 20 - 36x - 59 (0) 2 - 20 - 36x - | - 136x | 1 = 1 = 6 = 5 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = 6 | y= \-9tdt
y= \-9tdt
-\frac{1}{2}\forall \forall \fo | - 136x | 1 = 6 5 = 1 = 6 5 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = | The ball shikes - 136x | - 136x
- 136x | The ball shikes - 136x - 1964-1-96 - 1964-1-96 - 1964-1-96 - 1964-1-96 - 1964-1-96 - 1964-1-96 - 1964-1-96 - 1964-1-96 - 1964-1-96 - 136x - 136x | The ball strikes - 136x - 13 | = 6 5
- 136 × 180
+= + 180
A 180 | = 6 5
- 136× (\$ (\$20) | = 6 5
- 136 × 180
- 136 × 180
- 136 × 180 | = 6 5
- 136× 5 (+70, | t== 136x (\$ (\$ 20) | x= 50 x 6 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ |
| : 36x : 32 -9t : 42 -9t : 42 - 19t dt : 42 - 19t dt : 43 - 19t dt - 136x - 136x - 136x | : G=0 : y= -9t y= \-9tdt y= \-9tdt -\frac{1}{9} \frac{1}{9} \fr | 7 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = 6 = | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 7 = 2 = 6 = 1 = 6 = 1 = 6 = 6 = 6 = 6 = 6 = 6
 | y= -9t
y= \-9tdt
-\frac{1}{9t^2+C4}
\q=\frac{1}{2}\frac{1}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1}{2}\frac{1} | 7 = 2 = 6 = 1 = 136x - 36 = - 2 = 12 = 12 = 12 = 12 = 12 = 12 = 1
 | y= \-9tdt y=\\-\\\-\\\\-\\\\\\\\\\\\\\\\\\\\\\\\ | 7 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 6 | y= \-9tdt -\frac{1}{9t} \frac{1}{2} \\ \[\frac{1}{9t} \frac{1}{2} \\ \[\frac{1}{2} \frac{1}{2} \\ \] \[\frac{1}{2} \frac{1}{2} \\ \[\frac{1}{2} \frac{1}{2} \\ \] \[\frac{1} | 7 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | = \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
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- 136× 180
- 136× 180
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- 136× 180 | = 6 5
- 136 × 5 (+70,
 | t== 136x \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | t== \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 2 300 \ 2 = 300 \ 2 = 300 \ 3
 |
| : 4= -9t dt y= 1-9t dt y= -\frac{1}{9} \frac{1}{9} \frac{1}{1} \frac{1}{9} \frac{1}{1} \frac{1} \frac{1}{1} \frac{1}{1} \frac{1}{1} \frac{1}{1} \fra | : G=0
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: G=1
: | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | y= 1-9t dt y= 1-9t dt y= 1-29t dt 1-20 - 29t dt y= 20-29t dt y= 20 | 17 = 2 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 = 4 | y= \-9tdt y= \-9tdt \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 1 = 1 = 6 5 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | y= \-9tdt
y= \-9tdt
-\frac{1}{9}\frac{1}{9}\frac{1}{1}\frac{1}\frac{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac{1}\frac{1}{1}\frac | 120 - \frac{1}{2} = \frac{1}{2} \\ \frac{1} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = | y= \-9tdt -\frac{1}{9t^2+C_4} -\frac{1}{9t^2-9t} -\frac{1}{36x} | The ball shikes - 136x - 136 | = 6/2 (\$x0) | = 6 5
- 136 × 180
- 136 × 180
- 136 × 180
- 136 × 180 | t== 1/180
- 136× (\$ (t>0, | = 6/5
- 136× 15 (+20) | = 6 5
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| 29 = 7
36 × 4 = 6 = 6
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+=6/2 | $\frac{5}{4} = \frac{136}{4} \times \frac{180}{4}$ $\frac{7}{4} = \frac{136}{4} \times \frac{180}{4}$ | $t = \sqrt{36} \times \sqrt{\frac{5}{3}} (tx0)$ | t=65
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| 1 | 1 | : 4 = 9t dt = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 1
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(t>0, | $\frac{5}{4} = \frac{136}{4} \times \frac{180}{4}$ $\frac{5}{4} = \frac{136}{4} \times \frac{180}{4}$ $\frac{5}{4} = \frac{136}{4} \times \frac{180}{4}$ | $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$
 | $t = \frac{136 \times 180}{4 \times 120}$ $t = 615$ $t = 615$ | $t = 6 \frac{136}{5}$ $t = 6 \frac{136}{5}$ $\frac{136}{5} \times \frac{180}{5} \times \frac{1}{5} \times \frac{1}$ | = 300 \ \frac{2}{5}
 |
| - 136x | .: 4= -9t
.: 4= -9t
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.: 6= -1 | 1. 36x 1. 32 -9t of the series of the serie | 1 = 1 = 9t dt y = 1 = 9t dt \[\frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac | The ball shikes 1 - 24 - 20 1 - 29 - 29 - 29 - 29 - 29 - 29 - 29 - 2 | - 136x | The ball shikes 136x 136x 14=90 15=18 1 | The ball strikes 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 4 = 6 5 | The ball shikes 1 = 1 = 6 = 7 The ball shikes 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | The ball shikes 4=65 190= \frac{1}{29} & \frac{1}{2} & \frac{1} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \frac{1}{2} & \fra | The ball shikes 136x 14=90 190-\frac{1}{29} \frac{1}{29} \frac{1}{2} = 90 190-\frac{1}{29} \frac{1}{2} = 90 100-\frac{1}{29} \frac{1}{2} = 90 100-\frac{1}{2} \frac{1}{2} = 10 100-\frac{1}{2} \frac{1}{2} \frac{1}{2} = 10 100-\frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} = 10 100-\frac{1}{2} \frac{1}{2} \fra | t= 6/2
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| 36x
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- | : 3= -9t y= \-9t dt y= \-9t dt = \-\frac{1}{29t + C4} \tag{20} | - 136x | .: $y = -9t$ $y = \int -9t dt$ $y = \int -9t dt$ $y = -\frac{1}{2}9t^2 + C_4$ $y = -\frac{1}{2}9t^2 + Q_0$ $y = -\frac{1}{2}9t^2 + Q_0$ $y = -\frac{1}{2}9t^2 + Q_0$ $y = -\frac{1}{2}9t^2 - Q_0$ | The ball strikes 1 = 6 5 1 = | y= \-9tolt y=\-\frac{1}{9tolt} \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | The ball strikes - 136x - 1964-19 - 1964-19 - 1964-19 - 1964-19 - 136x | y=\-9tdt -\frac{1}{2} | The ball strikes - 136x - 13 | y = \$ -9t dt - 18t + C4 - 190 - 19t + C4 - 190 - 19t - 18 - 18t - 18 - 1 | $\frac{5}{4} = \frac{136}{4}$ | $t = \frac{136 \times \sqrt{3}}{5} (t > 0)$ $t = 6\sqrt{5}$ $t = 6\sqrt{5}$ When $t = 6\sqrt{5}$ | $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ | $t = \frac{136 \times 180}{4 \times 180}$ $t = 615$ $t = 615$ When $t = 615$ | t = 6/5 $t = 6/5$ $t = 6/5$ $t = 6/5$ $t = 6/5$ | 300 \S |
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- 136× (\$ (+>0,
- 136× (\$ (+>0, | $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ | $t = 6 \frac{5}{36 \times 180}$ $t = 6 \frac{5}{3}$ $t = 6 \frac{5}{3}$ | 300 \\ \frac{2}{5} |
| : 4= -9t dt y= \-9t dt \\ \\ \\ \= \-\frac{1}{2}\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | : 4= 9t dt y= 1-9t dt y= -\frac{1}{2}\text{61} \frac{1}{2}\text{61} \frac{1}{2}\text | 1 = 1 = 6 = 1 36x 36 | 1 = \frac{1}{2} | The ball strikes 1 = 1 = 18 1 = 10 = 19 1 = 10 = 19 1 = 10 = 19 1 = 10 = 18 1 = | - 136x | The ball strikes 1 = 6 5 1 = | The ball shikes 4= 6 5 1-96-2-96 1-96-2-9 | A = 2 = 2 = 18 1 | J= \-9tolt \[\frac{1}{2} \\ \frac{1}{2} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | The ball strikes 1 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | $t = 6 \frac{2}{36} \times \frac{2}{3} (tx0)$ $t = 6 \frac{2}{3} \times \frac{2}{3} (tx0)$ | $\frac{5}{6} = \frac{136}{180}$ $\frac{5}{6} = \frac{136}{180}$ $\frac{5}{6} = \frac{136}{180}$ | $t = 6 \frac{5}{5}$ $t = 6 \frac{5}{5}$ $t = 6 \frac{5}{5}$ $t = 6 \frac{5}{5}$ | $t = \frac{5}{4} = \frac{180}{180}$ $t = 6 = \frac{5}{4}$ $t = 6 = \frac{5}{4}$ $t = 6 = \frac{5}{4}$ | $t = 6 \frac{2}{36} \times \frac{2}{3} (tx)$ $t = 6 \frac{2}{3} \times \frac{2}{3} (tx)$ $t = 6 \frac{2}{3} \times \frac{2}{3} (tx)$ | 300 5 |
| : 32 -9t dt y= \-\frac{1}{29t + C4} \[\frac{1}{2} \ | - 136x | 1. 36x 1. 32 -9t of to | 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | The ball shikes 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 | The ball strikes - 136x - 13 | The ball shikes 136x 1-296-1-96 1-296-1-96 1-296-1-96 1-296-1-96 1-36x 1 | The ball strikes - 136x - 13 | The ball shikes 136x 136x 136x 14 = 6 5 5 5 5 15 = 18 5 5 16 = 18 5 5 17 = 18 5 5 18 = 18 5 5 19 = 18 5 5 10 = 19 5 10 = 19 5 10 = 18 5 | The ball strikes 4 = 6 5 4 = 6 5 4 = 6 5 When t= 6 5 When t= 6 5 When t= 6 5 | The ball shikes 136x 1-296-1-96-1-96-1-96 1-296-1-96-1-96-1-96-1-96-1-96-1-96-1-96 | $\frac{5}{4} = \frac{136}{4}$ $\frac{5}{4} = \frac{136}{4}$ $\frac{5}{4} = \frac{180}{4}$ $\frac{5}{4} = \frac{180}{4}$ | $\frac{5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{7}{5}$ $\frac{5}{5} = \frac{7}{5}$ $\frac{5}{5} = \frac{7}{5}$ $\frac{5}{5} = \frac{7}{5}$ | $t = 6 \frac{5}{5}$ $t = 6 \frac{5}{5}$ $t = 6 \frac{5}{5}$ $(tx0)$ | $t = 6/5$ $t = 6/5$ $- \sqrt{36} \times \sqrt{5} (420)$ | $\frac{5}{5} = \frac{5}{7}$ $\frac{5}{7} = \frac{5}{7}$ $\frac{5}{7} = \frac{5}{7}$ $\frac{5}{7} = \frac{5}{7}$ $\frac{5}{7} = \frac{5}{7}$ | 300 \S |
| 1 = 1 = 6 = 1 | 1 = \ -9t of t = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | y= -9t
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- 136x | The ball shikes 1 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | The ball shikes 1 = 6 5 When t= 6 5 1 = 6 5 When t= 6 5 1 = 6 5 When t= 6 5 When t= 6 5 When t= 6 5 When t= 6 5 | The ball shikes 1 = 6 5 1 = | The ball shikes - 136x - 1964-4 - 1964-4 - 1964-90 - 1964-90 - 1964-90 - 1964-90 - 1964-90 - 1964-90 - 136x | The ball shikes 1 = 6 5 1 = | The ball shikes 1 = 6 5 1 = | $\frac{602}{4}$ | $\frac{5}{6} = \frac{136}{180}$ $\frac{5}{6} = \frac{136}{180}$ $\frac{5}{6} = \frac{136}{180}$ $\frac{5}{6} = \frac{136}{180}$ | t=65
- 136× 5 (txo, | t = 6/5 $t = 6/5$ $t = 6/5$ $t = 6/5$ | $t = 6 \frac{5}{36 \times 180}$ $t = 6 \frac{5}{3}$ $t = 6 \frac{5}{3}$ | 300 \2
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| 19 = 1 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 | : 4= -9t
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18 18 - 1 | 1 = 1 = 6 5 5 5 5 5 5 5 5 5 | $\frac{5}{4} = \frac{136}{4}$ $\frac{5}{4} = \frac{136}{4}$ $\frac{5}{4} = \frac{180}{4}$ $\frac{5}{4} = \frac{180}{4}$ $\frac{5}{4} = \frac{180}{4}$ | $t = 6\sqrt{\frac{2}{3}}$ $t = 6\sqrt{\frac{2}{3}}$ $-\sqrt{\frac{36}{3}} \times \sqrt{\frac{2}{3}} (tx)$
 | $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ | $t = \frac{5}{36} \times \frac{5}{5} (tx0)$ $t = 6\sqrt{5}$ $\sqrt{9}$ | $t = 6\sqrt{\frac{2}{36}}$ $t = 6\sqrt{\frac{2}{3}}$ $t = 6\sqrt{\frac{2}{3}}$ $\sqrt{\frac{2}{3}}$ $\sqrt{\frac{2}{3}}$ $\sqrt{\frac{2}{3}}$
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- 136× (\$ (\$x0)
- 136× (\$ (\$x0) | $\frac{5}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ | $\frac{5}{4} = \frac{136}{4}$ $\frac{5}{4} = \frac{136}{4}$ $\frac{5}{4} = \frac{180}{4}$ $\frac{5}{4} = \frac{180}{4}$ $\frac{5}{4} = \frac{180}{4}$ | $t = 6\sqrt{3}$ | $\frac{5}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ $\frac{6}{5} = \frac{136}{5}$ | 300 5 |
| 1 = 1 = 6 5 5 5 5 5 5 5 5 5 | 1 = 1 = 6 5 5 5 5 5 5 5 5 5 | 1. 36x
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1. | 1 = 1 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 1. j= -9t dt y= 1-26 t + C4 - 20 - 29 t 2 + C4 - 20 - 29 t 2 + C4 - 20 - 29 t 2 - 20 - 20 t | The pall strikes - 136 = 15 15 15 15 15 15 15 15 | The ball shikes 1 = 6 5 1 = | The pall strikes - 136 = 12 136 - 136 1 1 1 - 136 1 1 - 136 | He ball shikes 1 = 6 5 1 = 6 | The pall strikes - 136 = 15 of t ch - 136 = | The ball shikes 1 = 6 5 1 = | $\frac{5}{4} = \frac{136}{4}$ | $t = 6 \frac{2}{5}$ $t = 6 \frac{2}{5}$ $- \frac{36}{5} \times \frac{2}{5} (t > 0)$ | t = 6/3 $t = 6/3$ | t = 6/5 $t = 6/5$ $t = 6/5$ $t = 6/5$ | $t = 6 \frac{2}{5}$ $t = 6 \frac{2}{5}$ $\frac{26 \times \sqrt{3}}{5} (t > 0)$ $\frac{1}{5} (t > 0)$ | 300 5 |
| 1 = 1 = 6 = 1 | 1 = 1 = 6 = 1 | y= -9t
y= \-9t dt
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- 136x | The ball shikes - 136x - 136 | The ball shikes 1 = 6 5 1 = | The ball shikes 1 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | The ball shikes - 136x + C4 - 190 - 196 + C4 - 190 - 196 - 296 - 190 - 196 - 296 - 186 - 18 | The ball shikes - \frac{1}{2} \frac{1} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \frac{1}{2} \f | The ball shikes 1 = 6 5 1 = | men t= 6/2
- 136× (\$ (\$50,
- 136× (\$ (| $\frac{5}{6} = \frac{136}{2}$ Then $\frac{1}{2} = \frac{136}{2}$ $\frac{136}{2} = \frac{136}{2}$ $\frac{136}{2} = \frac{136}{2}$ $\frac{136}{2} = \frac{136}{2}$ $\frac{136}{2} = \frac{136}{2}$ | men t= 6/2
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- 136× (\$ (t>0) | $t = 6 \frac{5}{26}$ $t = 6 \frac{5}{2}$ $t = 6 \frac{5}{2}$ $t = 6 \frac{5}{2}$ | $\frac{5}{5} = \frac{5}{5}$ when $\frac{5}{5} = \frac{5}{5}$ | 300 5 |
| 1 = 1 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 1 = 1 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 2 3 2 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | 1 = 1 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = | 1 = 1 = 0 = 1 = 0 = 1 = 0 = 1 = 0 = 1 = 0 = 0 | 1 = 3-9t dt y = 5-9t dt when t= 0 y= 90 1 = 10 = 10 t = 0 1 | 2 3 2 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | The ball shikes 120 - 136x 136x 14 - 15 - 15 oft 15 - 18 oft 16 - 18 oft 17 - 18 oft 19 | 1 = 2 = 0 = 1 = 0 = 1 = 0 = 1 = 0 = 1 = 0 = 0 | The ball shikes 120 = 136x 136x 14=00 15=00 16 | 2 3 2 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | $\frac{50 \times 6}{4}$ Then $\frac{1}{4} = 6$ $\frac{136 \times 13}{4} = \frac{180}{4}$ $\frac{136 \times 13}{4} = \frac{180}{4}$ | $\frac{50 \times 6}{4}$ Then $\frac{1}{4} = 6 = \frac{1}{4}$ Then $\frac{1}{4} = 6 = \frac{1}{4}$ Then $\frac{1}{4} = 6 = \frac{1}{4}$ Then $\frac{1}{4} = \frac{1}{4} = 1$ | T= 6 5
F= 6 5 | $\frac{t=2\sqrt{36}}{4}$ when $t=6\sqrt{3}$ $\frac{5}{4}$ $$ | $t = 6 \frac{1}{36}$ $t = 6 \frac{1}{36}$ $t = 6 \frac{1}{36}$ $\frac{1}{3} (tx)$ | 300 5 |
| 36x 50x 6. \$\\\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ | 36x 50x 6. \$\\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \ | 1 | 1 = 1 = 9t dt y = 1 = 9t dt y = -\frac{1}{2} = 9t dt \[\frac{1}{2} = \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} | 1 | - 136x | The ball strikes 1 = 6 5 1 = | The ball shikes 1 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | 2 30 × 6 = 2
E | The ball shikes 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 6 = 6 = | 1 = 20 × 6. 5
1 = 20 = 20
1 = 20 = 20
2 | $\frac{50 \times 6}{4}$ $\frac{5}{4}$ | 2 50 × 6 \ \frac{2}{2} \\ \text{Aps. } \\ Ap | $\frac{50 \times 6}{5}$ Then $\frac{5}{5} = \frac{36 \times 5}{5} = \frac{5}{5}$ Then $\frac{5}{5} = \frac{5}{5} = \frac{5}{5}$ Then $\frac{5}{5} = \frac{5}{5} = \frac{5}{5$ | $\frac{50 \times 6}{5}$ when $\frac{5}{5} = \frac{36 \times 5}{9}$ $\frac{5}{5} = \frac{50 \times 6}{5}$ | 7 = 50 × 6 \ \frac{2}{2} \\ The standard of the standard | 300 5 |
| 36x 6 2 36x 3 36x | 36x 6 2 36x 6 | The ball shikes 1 = \ \frac{1}{29} \frac{1}{20} \frac{1}{2} \frac | 1 = 1 = 9t dt = 1 = 9t dt = 1 = 9t dt = 1 | The ball shikes 1 = 1 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | - 36x
- | The ball shikes 1 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | The ball strikes 1 = 6 5 1 = | The ball shikes - 136x - 136 | The ball strikes 1 = 6 5 1 = | The ball shikes 1 = 6 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | $\frac{50 \times 6\sqrt{\frac{2}{5}}}{5}$ when $\frac{5}{5} = 6\sqrt{\frac{2}{5}}$ $\frac{7}{5} = 6\sqrt{\frac{2}{5}}$ $\frac{7}{5} = 6\sqrt{\frac{2}{5}}$ $\frac{7}{5} = 6\sqrt{\frac{2}{5}}$ | $\frac{50 \times 6}{5}$ Then $\frac{5}{5}$ $\frac{6}{5}$ $\frac{6}$ | $\frac{50 \times 6}{5}$ when $\frac{5}{5} = \frac{36 \times 5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5} = \frac{5}{5}$ | $\frac{26}{50} = \frac{20}{5}$ $\frac{26}{5} = \frac{26}{5}$ $\frac{26}{5} = \frac{26}{5}$ $\frac{26}{5} = \frac{26}{5}$ $\frac{26}{5} = \frac{26}{5}$ | $\frac{50 \times 6}{5}$ Then $\frac{5}{5}$ $\frac{5}$ | 300 5 |
| 29 9 4 25 = 26 \frac{2}{2} \fr | 20 × 6 (2) Sept = 20 × 6 (2) Sept = 20 × 6 (2) The pall strikes 10 = 20 + 20 + 20 10 = 20 + 20 | y= -9t dt y= \-9t dt \[\frac{1}{2} | 1 | 1. y= -9t dt y= 1-20 x 6 2 = 2 when t= 0 y= 90 - 20 t= 18 - 20 | 1 | The ball shikes 1 = 6 5 1 = | 20 × 6 (2) Sept = 20 × 6 (2) The pall strikes 1 = 246 = 20 = 20 1 = 20 = 246 = 20 2 = 246 | The ball shikes 1 = 6 5 1 = | 20 × 6 (2) - 10 = - 10 + 10 + 10 + 10 + 10 + 10 + 10 + 10 | The ball shikes 1 = 6 5 1 = | $\frac{50 \times 6\sqrt{2}}{5}$ when $\frac{5}{120}$ $\frac{5}{120}$ $\frac{5}{120}$ $\frac{5}{120}$ $\frac{5}{120}$ $\frac{5}{120}$ | $\frac{50 \times 6\sqrt{\frac{2}{5}}}{50 \times 6\sqrt{\frac{2}{5}}}$ when $\frac{5}{5} = \frac{136 \times \sqrt{\frac{2}{5}}}{50 \times 6\sqrt{\frac{2}{5}}}$ | $\frac{50 \times 6\sqrt{5}}{4 \times 6\sqrt{5}}$ $\frac{50 \times 6\sqrt{5}}{4 \times 6\sqrt{5}}$ $\frac{50 \times 6\sqrt{5}}{4 \times 6\sqrt{5}}$ | $\frac{50 \times 6\sqrt{5}}{4 \times 6\sqrt{5}}$ | $\frac{50 \times 6\sqrt{5}}{5}$ when $\frac{5}{5} = 6\sqrt{5}$ $\frac{5}{5} = 6\sqrt{5}$ | 300 5 |
| : 30x 6 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ | : G=0
: y= -9t
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- 300 5 - 300 5 - 36x - 300 5 - 300 | The ball shikes 120 = 20 × 6 = 3 120 = 136 × 10 136 × 12 = 18 136 × 12 = 18 136 × 12 = 18 136 × 12 = 18 136 × 12 = 18 136 × 136 × 12 = 18 136 × 136 | The ball strikes 1 = 50 × 6 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | The ball shikes - 136x - 136 | The pall shikes 1 = 20 × 6 2 = 2 2 = 20 × 6 2 = 2 2 = 20 × 6 2 | The ball shikes 120 x 6 2 = 20 136 x 1 = 10 136 x 1 = 1 | $\frac{50 \times 6\sqrt{2}}{4 \times 6\sqrt{2}}$ $\frac{5}{2} \times 6\sqrt{2}$ | $\frac{5}{5} = 300 \frac{5}{2} \frac{5}{2} $ | $\frac{50 \times 6}{5}$ when $\frac{5}{5} = \frac{36 \times 5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5} = \frac{5}{5}$ | $\frac{6}{5}$ $\frac{6}$ | $\frac{50 \times 6\sqrt{2}}{50 \times 6\sqrt{2}}$ $\frac{600}{5}$ $\frac{600}{5}$ $\frac{600}{5}$ $\frac{600}{5}$ $\frac{600}{5}$ $\frac{600}{5}$ $\frac{600}{5}$ $\frac{600}{5}$ | |
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1 = 30x 6 \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = | : y= -9t dt y= \-9t dt = \frac{1}{29t + C4} : C4 = 90 \frac{1}{29t - \frac{1}{29t + C4}} \frac{1}{29t - \frac{1}{29t + C4}} \frac{1}{29t - \frac{1}{29t + C4}} \frac{1}{29t - \frac{1}{29t - 29t - 29 | = 300 \\ \frac{2}{2} = 300 \\\ \tag{3} = 300 \\\\ \tag{3} = 300 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | y= \-9tolt y=\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | The ball strikes. | y=\-9talt -\frac{1}{286+64} -\ | The ball strikes - 136x - 13 | y= \-9tolt = \frac{1}{9t^2+C4} = \frac{1}{90} \frac{1}{ | $\frac{6}{5}$ | $\frac{5}{5} = \frac{5}{300}$ Then $\frac{5}{5} = \frac{5}{5}$ | $t = 6 \frac{36}{5}$ when $t = 6 \frac{5}{5}$ $t = 6 \frac{5}{5}$ $- \frac{36}{5} \times \frac{5}{5} = \frac{450}{5}$ $- \frac{36}{5} \times \frac{5}{5} = \frac{450}{5}$ | $\frac{50 \times 6\sqrt{3}}{5}$ when $\frac{5}{5} = 6\sqrt{3}$ $\frac{5}{5} = 50 \times 6\sqrt{3}$ $\frac{5}{5} = 50 \times 6\sqrt{3}$ | $t = 6\sqrt{3}$ when $t = 6\sqrt{3}$ $- \sqrt{36} \times \sqrt{9}$ | • |
| 300 \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} | 300 \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} | - 300 \ \frac{1}{36x} \ | 1 = 30 × 6 \\ \(\frac{1}{2} = \frac{1}{2} \\ \(\frac{1}{2} | - 300 \ \frac{1}{36x} \ | - 36x 6 \\ - 300 \\ - 300 \\ - 300 \\ - 300 \\ - 300 \\ - 36x \\ - 36 | 1 = 30 × 6 5 5 5 5 5 5 5 5 5 | The ball shikes 120 - = 186+C4 1- = 196-196 1- = 186 + 190 | J= 5-96dt = -\frac{1}{2}\frac{1} | The ball shikes 120 = \frac{1}{29} | The ball strikes 1 = 6 = 1 = 6 = 1 = 6 = 1 = 6 = 6 = 1 = 6 = 1 = 6 = 6 | $\frac{50 \times 6\sqrt{3}}{5}$ $\frac{50 \times 6\sqrt{3}}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ | $\frac{50 \times 6\sqrt{\frac{2}{3}}}{5}$ $\frac{50 \times 6\sqrt{\frac{2}{3}}}{5}$ $\frac{50 \times 6\sqrt{\frac{2}{3}}}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ | = 300 \frac{2}{5} | $t = \frac{136 \times 15}{5}$ when $t = 615$ $- 136 \times 15$ $- 136 \times 15$ $- 136 \times 15$ $- 136 \times 15$ $- 180$ | $t = 6 \frac{2}{36 \times 180}$ | |
| : 4= -9t dt y= \-9t dt \[\frac{1}{2} = \frac{1}{2} \\ \frac{1} = \frac{1}{2} \\ \frac{1}{2} = | : 4= -9t
- 19t - 9t
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- | - 36x 6 \\ - 36x - 59 \\ - 36x - 50 \\ - 36x - 50 \\ - 36x - 5 | 1 = 1 = 9 t dt = 1 = 9 t dt = 1 = 9 t dt = 1 = 1 = 1 = 9 t dt = 1 = 1 = 1 = 9 t dt = 1 = 1 = 1 = 1 = 9 t dt = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = | = 300 \ \frac{2}{5} \\ \frac{2}{5} \ | - 36x 6 3
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- 36x 6 3 | The ball strikes 1 = 300 \ \frac{2}{5} = 300 \ \frac{2}{5} = \frac{1}{5} \ \frac{1}{5} = \frac{1}{5} \ \frac{1}{5 | The ball shikes 1 = 50 × 6 \\ 1 = 50 × 6 \\ 1 = 50 × 6 \\ 1 = 50 × 6 \\ 1 = 50 × 6 \\ 1 = 36 × 6 \\ 1 = | The ball strikes - 136x - 13 | The ball shikes 1 = 50 × 6 \\ 1 = 50 × 6 \\ 1 = 50 × 6 \\ 2 = 300 \\ 1 = | The ball strikes 1 = 300 \ \frac{2}{5} = 36\times 1 = 30 \ \frac{2}{5} = 36\times 1 = 36\times 1 = 36\times 1 = 36\times 1 = 6 \ \frac{2}{5} = 20 1 = 36\times 1 = 6 \ \frac{2}{5} = 20 1 = 36\times 1 = 6 \ \frac{2}{5} = 20 2 = 6 \ \frac{2}{5} | $\frac{50 \times 6\sqrt{3}}{5}$ $\frac{5}{5} = \frac{36 \times 5}{5}$ $\frac{5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5}$ | 50 × 6 \ \frac{2}{5} \ 2 | $\frac{5}{5} = \frac{36 \times 5}{2}$ when $\frac{5}{5} = \frac{36 \times 5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5} $ | $t = 6 \frac{36}{5}$ when $t = 6 \frac{5}{5}$ $t = 6 \frac{5}{5}$ $\frac{5}{5}$ | = 300 \(\frac{2}{2}\) = \(\frac{2}\) = \(\frac{2}{2}\) = \(\frac{2}{2}\) = \(\frac{2} | |
| - 300 \\ \frac{1}{36} \\ \frac | - 300 = 300 = 36x - 300 = 300 = 36x - 300 = 300 = 36x - | - 300 = 300 | 1 = 30 × 6 \\ \(\frac{1}{36} \) \(\frac{1} | - 300 = 300 | - 300 = 300 = 36x - 300 = 300 = 36x - 300 = 300 = 36x - | The ball shikes 1 = 5 = 6 5 1 = 5 5 5 1 = 5 1 = 5 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 1 = 5 | The pall strikes - 136x - 13 | The ball shikes 136x 1 | - 300 \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \ | The ball shikes 136x | $\frac{50 \times 6\sqrt{3}}{5}$ $\frac{5}{5} = 300\sqrt{3}$ $\frac{5}{5} = 300\sqrt{3}$ $\frac{5}{5} = 300\sqrt{3}$ $\frac{5}{5} = 300\sqrt{3}$ | $\frac{50 \times 6\sqrt{2}}{50 \times 6\sqrt{2}}$ $\frac{50 \times 6\sqrt{2}}{50 \times 6\sqrt{2}}$ $\frac{5}{5} \times \frac{5}{5} $ | $t = 6 \frac{5}{36 \times 1}$ $t = 6 \frac{5}{3}$ $t = 6 \frac{5}{3}$ $\frac{5}{3} (tx)$ | $t = 6 \frac{5}{4}$ $- \frac{36 \times 5}{4}$ $- \frac{36 \times 5}{4}$ $- \frac{5}{4}$ $- $ | $\frac{5000}{5}$ $\frac{5000}{5}$ $\frac{5000}{5}$ $\frac{5000}{5}$ $\frac{5000}{5}$ $\frac{5000}{5}$ $\frac{5000}{5}$ $\frac{5000}{5}$ | |
| = 300 \\ \frac{2}{2} = 300 \\ | = 300 \\ \frac{2}{2} = 300 \\ | : 4 = 9t dt y = \ -9t dt \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | 1 = 300 = 36 x 6 \\ \(\frac{1}{2} = \frac{1}{2} \\ \(| - 36x 6 \\ \(\frac{1}{3} \) \ | - 36x 6 \\ \frac{1}{2} = 300 \ | The ball shikes 1 = 50 × 6 \\ 1 = 300 \\ | The ball strikes. 1 = 300 = 18 1 = 30 × 6 = 18 1 = 30 × 6 = 18 1 = 36 | y = \ -9t dt \[\frac{1}{2} | The ball strikes - 136x - 13 | The ball shikes 1 = 6 5 1 = 50 × 6 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 1 = 300 5 | $\frac{6}{5}$ Then $\frac{2}{5}$ $\frac{6}{5}$ $\frac{6}$ | $\frac{5}{5} = \frac{5}{20} = \frac{5}{20}$ $\frac{5}{20} = \frac{5}{20} = \frac{5}{200}$ $\frac{5}{20} = \frac{5}{200} = \frac{5}{200}$ $\frac{5}{200} = \frac{5}{200} = \frac{5}{200}$ $\frac{5}{200} = \frac{5}{200} =$ | $\frac{60}{2}$ when $\frac{1}{2} = 6$ $\frac{136 \times 15}{2}$ $\frac{180}{2} = 300 = \frac{1}{2}$ $\frac{180}{2} = 300 = \frac{1}{2}$ | $\frac{6}{5}$ Then $\frac{2}{5}$ $\frac{2}{50 \times 6}$ $\frac{2}{5}$ | $\frac{5}{5} = \frac{5}{20} = \frac{26}{5}$ when $\frac{5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5}$ $\frac{5}{5} = \frac{5}{5}$ | |
| 300 \\ \frac{1}{3} \\ | 300 \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} = \frac{1}{2} \\ \frac{1}{2} | : 4 = 9t dt | 1 = 30 × 6 \\ \(\frac{1}{2} = \frac{1}{2} \\ \(\frac{1}{2} | - 36x 6 3
- 300 3
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- 36x 6 3 | $\frac{50 \times 6\sqrt{3}}{5}$ $\frac{50 \times 6\sqrt{3}}{5}$ $\frac{50 \times 6\sqrt{3}}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ $\frac{5}{5}$ | $t = 6 \frac{2}{2}$ $- \frac{26 \times 6}{2}$ $- \frac{26 \times 6}{2}$ $+ 2$ | $\frac{50 \times 6}{5}$ $\frac{50 \times 6}{5}$ $\frac{5}{5} \times \frac{5}{5} \times \frac{5}$ | $t = \frac{136 \times 15}{5}$ $- \frac{136 \times 15}{5}$ $- \frac{136 \times 15}{5}$ $- \frac{180}{5}$ $- \frac{180}{5}$ $- \frac{180}{5}$ | $t = 6 \frac{2}{36 \times 6}$ $\frac{2}{36 \times 6}$ $\frac{2}{36 \times 6}$ | |
| : C3=0 : C3=0 : C3=0 : C3=0 : C3=0 : C4=90 : C4=90 - 1962=0 | : 4 = 9 t dt y = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | : 3= -9t y= \-9tott y= \-9tott \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | = 300 \(\frac{1}{3} \) = \frac{1}{3} \(\frac{1}{3} \) = | $y = -9t$ $y = \int -9t dt$ $y = \int -9t dt$ $y = -\frac{1}{2}9t^2 + C4$ The ball shikes the ground in the ground | = 300 \frac{3}{3} = \frac{1}{3} \frac{1}{ | = \frac{180}{290} = \frac{1}{290} \frac{1}{290} = \frac{1}{2 | = 300 \frac{2}{3} = \frac{1}{2} \frac{1}{ | = \frac{1}{2} \fra | y=\\frac{186^3+C4}{86^3+C4} when t=0, y=90 \(\frac{1}{2}\frac{16^3+C4}{290}\) \(\frac{1}\frac{16^3+C4}{290}\) \(\frac{1}{2}\frac{16^3+C4}{290}\) \(\frac | y=\-9tott =\frac{1}{2}\frac{1}{2}\tott =\frac{1}{2}\f | $\frac{50 \times 6\sqrt{3}}{5}$ when $\frac{5}{5} = 6\sqrt{3}$ $\frac{5}{5} = 300\sqrt{5}$ $\frac{5}{5} = 300\sqrt{5}$ | $\frac{5}{5} = 300$ $\frac{5}{5} = 300$ $\frac{5}{5} = 400$ $\frac{5}{5} = 40$ | $t = 6 \frac{5}{4}$ when $t = 6 \frac{5}{4}$ $t = 6 \frac{5}{4}$ $\frac{5}{4} = \frac$ | $t = 6\sqrt{3}$ when $t = 6\sqrt{3}$ $- \sqrt{36} \times \sqrt{3}$ $- \sqrt{36} \times$ | $\frac{5}{5} = 300 = \frac{2}{36}$ $\frac{5}{2} = 300 = \frac{2}{3}$ $\frac{7}{2} = \frac{180}{4}$ $\frac{7}{2} = \frac{180}{4}$ $\frac{7}{2} = \frac{180}{4}$ $\frac{7}{2} = \frac{180}{4}$ | |
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	AIHEMAINS EXIENSION SUGGESTED SOLUTIONS $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	only 1 mark	
SUGGESTED SOLUTIONS W= $\pi \int^{\pi} \frac{3^2 \cos^2 x}{3^2 \cos^2 x} dx$ - $\pi \int^{\pi} \frac{3^2 \cos^2 x}{2} dx$ - $\pi \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ 1 - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ 1 - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos x \right) dt$ - $\frac{9\pi}{2} \int^{\pi} $	MARKS MARKS MARKS	came man received	
SUGGESTED SOLUTIONS W= $\pi \int_{0}^{\pi} \frac{\Im^{2} \cos^{2} \frac{\pi}{2} d\Lambda}{2} d\Lambda$ - $\pi \int_{0}^{\pi} \frac{\Im^{2} \cos^{2} \frac{\pi}{2} d\Lambda}{2} d\Lambda$ - $\pi \int_{0}^{\pi} \frac{\Im^{2} (\cos^{2} \frac{\pi}{2} d\Lambda)}{2(1 + \cos^{2} \frac{\pi}{2} d\Lambda)} d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos^{2} \frac{\pi}{2} d\Lambda) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos^{2} \frac{\pi}{2} d\Lambda) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2} + \sin^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi} \frac{1}{2} (\pi + \sin^{2} \frac{\pi}{2}) - (\cos^{2} \frac{\pi}{2}) d\Lambda$ - $\frac{\Im}{2} \int_{0}^{\pi}$	MARKS MARKS 1 1 1 1 1 1 1 1 1 1 1 1 1	where Ae-k+	
SUGGESTED SOLUTIONS NARKS $ \begin{array}{cccccccccccccccccccccccccccccccccc$	MARKS 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	did not show	
SUGGESTED SOLUTIONS $V = \pi \int^{\pi} \frac{3^{2} \cos^{2} x}{3^{2} \cos^{2} x} dn \qquad \frac{1}{2}$ $= \frac{3\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos^{2} x \right) d1 \qquad 1$ $= \frac{3\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos^{2} x \right) d1 \qquad 1$ $= \frac{3\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \cos^{2} x \right) d1 \qquad 1$ $= \frac{3\pi}{2} \int^{\pi} \frac{1}{2} \left(1 + \sin x\right) \int^{\pi} \frac{1}{2} d1 \qquad 1$ $= \frac{3\pi}{2} \left[(\pi + \sin x) - (\alpha + \sin \alpha) \right] \qquad \frac{1}{2}$ $= \frac{3\pi}{2} \left[(\pi + \sin x) - (\alpha + \sin \alpha) \right] \qquad \frac{1}{2}$ $= \frac{3\pi}{2} \left[(\pi + \sin x) - (\alpha + \sin \alpha) \right] \qquad \frac{1}{2}$ $= \frac{3\pi}{2} \left[(\pi + \sin x) - (\alpha + \sin \alpha) \right] \qquad \frac{1}{2}$ $= -K \left[Ae^{-Kt} + Te^{-Tc} \right] \qquad \frac{1}{2}$ $= -K \left[Ae^{-Kt} + Te^{-Tc} \right] \qquad \frac{1}{2}$ $= -K \left[Ae^{-Kt} + Te^{-Tc} \right] \qquad \frac{1}{2}$ $= -K \left[Ae^{-Kt} + Te^{-Tc} \right] \qquad \frac{1}{2}$ $= -K \left[Ae^{-Kt} + Te^{-Tc} \right] \qquad \frac{1}{2}$	MARKS MARKS 1 1 1 1 1 1 1 1 1 1 1 1 1	Shidand	17-77 for 6
SUGGESTED SOLUTIONS $V = \pi \int^{\pi} \frac{3^{2} \cos^{2} x}{0} dn$ $= 2\pi \int^{\pi} \frac{3^{2} \cos^{2} x}{2} dn$ $= 2\pi \int^{\pi} \frac{1}{2} (1 + \cos x) dn$ $= 2\pi \int^{\pi} \frac{1}{2} (1 + \cos x) dn$ $= 2\pi \int^{\pi} \frac{1}{2} (1 + \sin x) dn$ $= 2\pi \int^{\pi} \frac{1}{2} (\pi + \sin x) - (o + \sin x) dn$ $= -k \ln e^{-kt} - \pi$	MARKS 1 2 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1		17 1, 1, -ht
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SUGGESTED SOLUTIONS $V = \pi \int^{\pi} \frac{3^{2}}{2} \cos^{2} \frac{x}{2} dA$ $= \pi \int^{\pi} \frac{9 \cos^{2} \frac{x}{2}}{2} dA$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} (1 + \cos x) dA$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} (1 + \cos x) dA$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2}$ $= -\frac{9\pi}{2} \int^{\pi} \frac{1}{2} + \sin x \int^{\pi} \frac{1}{2} + \sin$	MARKS 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	(1	-K/He + 10-1
SUGGESTED SOLUTIONS $V = \pi \int^{\pi} \frac{\pi}{\sigma} \frac{\pi^{2}}{\sigma^{2}} \cos^{2} \frac{\pi}{\sigma} dn \qquad \frac{1}{2}$ $= -\pi \int^{\pi} \frac{\pi}{\sigma} \frac{1}{\sigma} \cos^{2} \frac{\pi}{\sigma} dn \qquad \frac{1}{2}$ $= -\pi \int^{\pi} \frac{\pi}{\sigma} \frac{1}{\sigma} (1 + \cos \pi) dn \qquad 1$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (1 + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \pi) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{2}$ $= -\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) - (o + \sin \sigma) \frac{1}{\sigma} \qquad \frac{1}{\sigma} (\pi + \sin \sigma) - (o + \sin \sigma) - ($	MARKS 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2		dt 1.17 - 1/4 - 7
SUGGESTED SOLUTIONS $V = \pi \int^{\pi} \frac{3^{2}}{\sigma} \frac{3^{2}}{\sigma^{2}} \frac{2^{2}}{\sigma^{2}} dA$ $-\frac{\pi}{2} \int^{\pi} \frac{1}{\sigma} \frac{1}{\sigma^{2}} \left(1 + \cos x \right) dt$ $-\frac{9\pi}{2} \int^{\pi} \frac{1}{\sigma} \frac{1 + \cos x}{2} dA$ $-\frac{9\pi}{2} \int^{\pi} \frac{1 + \sin x}{2} \frac{1}{\sigma}$ $-\frac{9\pi}{2} \left[(\pi + \sin x) - (\sigma + \sin x) \right]^{2}$ $-\frac{9\pi}{2} \left[(\pi + \sin x) - (\sigma + \sin x) \right]^{2}$ $\frac{9\pi}{2} \left[(\pi + \sin x) - (\sigma + \sin x) \right]^{2}$ $\frac{9\pi}{2} \left[(\pi + \sin x) - (\sigma + \sin x) \right]^{2}$	MARKS 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2		$dT = -kAe^{-kt}$
SUGGESTED SOLUTIONS SUGGESTED SOLUTIONS $ \begin{array}{cccccccccccccccccccccccccccccccccc$	MARKS 1 1 2 2 2 2		1
SUGGESTED SOLUTIONS $V = \pi \int_{0}^{\pi t} \frac{\Im^{2} \cos^{2} x}{2} dn$ $-\frac{1}{2} \int_{0}^{\pi t} \frac{\Im^{2} \cos^{2} x}{2} dn$ $-\frac{1}{2} \int_{0}^{\pi t} \frac{1}{2} (1 + \cos x) dn$ $-\frac{1}{2} \int_{0}^{\pi t} \frac{1}{2} (1 + \cos x) dn$ $-\frac{1}{2} \int_{0}^{\pi t} \frac{1}{2} (1 + \cos x) dn$ $-\frac{1}{2} \int_{0}^{\pi t} (\pi + \sin x) - (0 + \sin x)$ $-\frac{1}{2} \int_{0}^{\pi t} (\pi + \sin \pi) - (0 + \sin x)$ $\frac{1}{2} \int_{0}^{\pi t} (\pi + \sin \pi) - (0 + \sin x)$	MARKS 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2		1) lot 7= 7= +A0
SUGGESTED SOLUTIONS $V = \pi \int_{0}^{\pi t} \frac{\Im^{2} \cos^{2} x}{2} dx$ $-\pi \int_{0}^{\pi t} \frac{\Im^{2} \cos^{2} x}{2} dx$ $-\frac{\Im}{2} \int_{0}^{\pi t} \frac{1}{2} (1 + \cos x) dt$ $-\frac{\Im}{2} \int_{0}^{\pi t} 1 + \cos x dt$ $-\frac{\Im}{2} \int_{0}^{\pi t} 2 (1 + \cos x) dt$ $-\frac{\Im}{2} \int_{0}^{\pi t} 2 + \sin x \int_{0}^{\pi t} 1$ $-\frac{\Im}{2} \int_{0}^{\pi t} (\pi + \sin \pi) - (o + \sin o)$ $\frac{\Im}{2} \int_{0}^{\pi t} 2 + \sin \pi$	MARKS 12 12 12 12 12		}
SUGGESTED SOLUTIONS $V = \pi \int_{0}^{\pi L} \frac{\pi}{3^{2}} \cos^{2} \frac{\lambda}{2} dx$ $-\pi \int_{0}^{\pi L} \frac{\pi}{2} \cos^{2} \frac{\lambda}{2} dx$ $= -\pi \int_{0}^{\pi L} \frac{\pi}{2} (1 + \cos \pi) dx$ $-\frac{\pi}{2} \int_{0}^{\pi} 1 + \cos \pi dx$ $-\frac{\pi}{2} \int_{0}^{\pi} 2 (1 + \sin \pi) - (0 + \sin \phi)$ $\frac{\pi}{2} \int_{0}^{L} \frac{\pi}{2} \left[(\pi + \sin \pi) - (0 + \sin \phi) \right]$	MARKS 12		9712 43
SUGGESTED SOLUTIONS $V = \pi \int_{0}^{\pi t} \frac{\Im^{2} \cos^{2} x}{2} dx$ $- \pi \int_{0}^{\pi t} \frac{\Im^{2} \cos^{2} x}{2} dx$ $- \frac{\Im}{2} \int_{0}^{\pi t} \frac{1}{2} (1 + \cos x) dt$	MARKS 1/2 1/2 1/2	(2)	7
SUGGESTED SOLUTIONS $V = \pi \int_{0}^{\pi} \frac{\pi}{2} \frac{3^{2} \cos^{2} \frac{x}{2}}{dx} dx$ $= -\pi \int_{0}^{\pi} \frac{9 \cos^{2} \frac{x}{2}}{2} dx$ $= -9\pi \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$ $= -\frac{9\pi}{2} \int_{0}^{\pi} \frac{1}{2} (1 + \cos x) dx$	MARKS		[77 + 5/07] = (0 + 5/00)
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	MATHEMATICS EXTENSION I - QUESTION 1	MARKER'S COMMENTS	MARKS

A=48 = 12 = 25
18 = 48 0 -15 x
$\frac{3}{8} - \frac{1}{25} -$
15 = 12 + 48 e 3 = 48 e - kt

MATHEMATICS EXTENSION 1 - QUESTION 14 (11) line of parallel to taugent at P tauayan focus equation of tangent When x = dat x2 = 4 ay : gradient of tangent at (20t, et) is t. Θ x-1, =m(x-2,) for parallel lines 7= 22 1-1= m (x-2) 01 2x 04 4a y - of2 = + (z -201) 0 12 P : A: + y- at = +2 - 2af Y = 12 - 2012 +012 y = + x - at2 20 2017 Execusion Trial Nat-مو SUGGESTED SOLUTIONS cm= h * must plove 5 Facus (0,0) (2af MARKS MARKER'S COMME and . Some studen some students stated the for incorrectly used found dr well done. वर्ष व व Q Y

y-a=+(x-a)

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Equation of locus is y=9 (x +0) x== (this is because if at vertex, inc through focus parallel to tagget with have no x interest.	is independent of x. I except x=0	y = 9	x = -q	(V) M= (-9+, 3)	(1+ , 2)	<i>a</i> ,	= (-4 +0 0+4)	$= \left(\frac{x^{\prime} + x^{\prime}}{x^{\prime}} + \frac{x^{\prime} + x^{\prime}}{x^{\prime}} \right)$	M= Midpoint	: K (-4, 0) S=(0,a)	7 = -4	3	for x intercook v=0	pg 2 & 14 SUGGESTED SOLUTIONS	MATHEMATICS EXTENSION I - QUESTION 14
				(6)	(1)					6				MARKS	
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