JE:	SISKA LORENZA / XII - IPA /16
	Aturan pembagian Turunan 2 fungsi
	y = u -> y' = u' v - uv'
	V 2
	$y = 6 + 3x^2$ $u' = 6x$
	$2x^2 + 5 \qquad 0' = 4x$
	y' = u'v -uv'
	10 2 X 20 X 20 2 X 20 X 20 2 X 20 X 20 2 X 20 X
	$= 6 \times (2 \times ^{2} + 5) - (6 + 3 \times ^{2}) (4 \times)$
	(2X2 +5)2
	$= 12X^{3} + 30X - 24X + 12X^{3}$
	$(2x^2+5)^2$
	= 6X
	$(2X^2+5)$
	→ u
2.	$y : 2 \times +3$ $u' = 2$
	2X-5 U' = 2
	X * 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	y' = u'v - uv'
	65 PB - 105 - X10) Q + X 412 B = 81
	= 2(2×-5)-(2×+3)(2)
	(2x-5)2) - 310 1 x (2 x x x x x x x x x x x x x x x x x
	= -16 = 0x - 16
	$(2x-5)^2$ $(2x-5)^2$
	y = ax+b -> y' = ad -bc
	$(cx+d)$ $(cx+d)^2$
	10 -6 2(-5) - 2(2)16
3.	$f(x) = 2x + 3 = 2(-3)^{-3}(-2)^{-3}$
	c d d

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	(1) (1)
9.	f(x) = x = 1x + 0 = 1(-4) - 0(1) = -4
	$x-4$ $1x-4$ $(x-4)^2$ $(x-4)^2$
5.	f(x) = 1
	x-9
	f'(x) = -1x + 1 = -1(-4) - (1)(1) = 3
	$(x-4)^2$ $(x-4)^2$
	~) U
6.	$y = \cot x = \cos x$
	s in x
	u' = -sinx
	$v' = \cos x$ $-\sin^2 x$ $-\cos^2 x$
	y' = u'b - ub' = (-sinx)(sinx) - (cosx)(cosx)
	$(sin x)^2$
	$= - (sin^2 x + cos^2 x)$
	$(sin \times)^2$
	= - (1) 2
	(sinx)
	= - (5C ² X
	414 - 414 - 414
	$y = a \sin x + b \cos x - y' = ad - bc$
	Csinx + dcosx (c.sinx + dcosx)2
	u = a sinx + b cosx -> u' = a cos x - b sinx
	V = C sinx + d cosx -> v' = c cosx - d sinx
	y' = u' U - u u'
	(c.(osx-dsinx))
	$y' = (a\cos x - b\sin x)(c\sin x + d\cos x) - (a\sin x + b\sin x)$
	(C 1111 × 4 d coo) .
	y' = acsinx cosx +adcos2x -bcsin2x -bdsinx cosx - [ac sinxcosx-
	x + 6c cos2 x - bd sinx cosx?
	(csinx +dcosx)2

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	y = acsinxcosx + adcos2x -bcsin2x -bdsinxcosx-acsinxcosx +							
	ad sin2x -bccos2x + bdsinxcosx							
	(csinx + d cosx)2							
	y' = ad (cos2 x + sin2 x) - bc (sin2 x + cos2 x)							
	$(c \sin x + d \cos x)^2$							
	y' = ad - bc							
	$(c \sin x + d \cos x)^2$							
	contoh pemakaian							
	$y = \cos x$							
	cos x +sinx							
	$y' = 0.\sin x + 1\cos x = o(1) - i(1) = -1$							
	$1 \sin x + 1 \cos x \qquad (1 \sin x + (\cos x)^2 (\sin x + \cos x)$							
2.	$y = 2 \sin x - 1 \cos x$							
	I SIN X + 3 COSX							
	y' = 6 - (-1) = 7							
	$(sinx + 3cosx)^2$ $(sinx + 3cosx)^2$							
	A THE AND A STAND STAND SOUTH OF THE STANDS							
3.	y = cosx - sinx							
	cosx + sinx							
	$y' = -1 \sin x + 1\cos x = -1 - 1 = -2$							
	$\frac{1}{1} \sin x + 1 \cos x \qquad (\sin x + \cos x)^{2}$							
4.	y = 1 - SINX							
	SINX - 3							
	$y' = -1 \sin x + 1 = -1 - 1 = -2$							
	$1 \sin x - 3 \qquad (\sin x + \cos x)^2 \qquad (\sin x + \cos x)^2$							
	A STEEL SERVE CONTRACTOR							
§.]	y = 4 cosx -2 sin x							
	5 COSX + 351NX							
	12.12 (C. 12.12.12.13)							

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	$y' = -2 \sin x + 9 \cos x = -10 - 12 = -22$
	$3510x + 5005x (3510x + 6005x)^{2} (3510x + 50005)^{2}$
	3 SINX + 5 COSX (35INX + 6 COSX) (35INX + 5 COSX)
6.	y = , , , ,
	sinx + cosx
	y' = Isinx + O cosx
	ISINX +1 cos X
	y' = 1-0
	$(1sinx + 1cosx)^2$
	y' =
	(SINX + COSX)2
	CATATAN VIDEO
	Turunan Pembagian dua fungsi
	$y = U \rightarrow y' = u'y - uy'$
	V 2
	contoh soal
<u> </u>	Turunan dari f(x) = 1 + tan 3 x adalah
	\sim
	$f(x) = 1 + \tan 3x$
	5 X
	U' = 3 sec ² 3 x
	V' = 5
	Al.
	f'(x) = u' v - uv'
	U2
	= (3 sec 2 3x)(5x) - (1+ tan 3x)(5)
	(5X)2

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	$f'(x) = 15 \times 5eC^2 3x - 5 + can 3x - 5$
	25 X ²
2.	Turunan dari $f(x) = cos x + 1$ adalah
	1-cosx
	u = cos x +1 -> u' = -sin x
	U = 1-COSX -> U' = SINX
	f'(x) = u'v - uv'
	V2
	= (-sinx)(1-cosx) - (cosx+1) (sinx)
	(1-(05 X) ²
	= -sinx + sinx cosx - (sinx cosx + sinx)
	$(1-\cos x)^2$
	$= -2 \sin x + 0$
	$(1-\cos x)^2$
	= -2 SINX TO HELD MOSTIVE TO
	$(1-\cos x)^2$
3.	Turunan dari $f(x) = \frac{1-\sin x}{adalah}$
	(In x - 3
	$U = 1 - SINX \rightarrow U' = -COSX$
	$V = SINX -3 \rightarrow V' = COSX$
	f'(x) = u'v - uv'
	V 2
	= (-cosx)(sinx-3) - (1-sinx) (cosx)
	$(sin x -3)^2$
	= -sinx cosx + 3 cosx - cosx +sinx cosx)
	(SINX-3)2
	= 2 cos x
	$(\sin x - 3)^2$
	Guille William L.

-1 + 0 -0

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	Date:
6.	JIKA f(x) = sinzx -cosx , maka f'(7) adalah
	COS 4x
	u = sin 2x - cosx -> u = 2 cos 2x + sin x
	v = cos 9x -> v' = -4 sin 9x
	f'(x) = u'v -uv'
	U 2
	$f'(x) = (2\cos 2x + \sin x)(\cos 4x) - (\sin 2x - \cos x)(-4\sin 4x)$
	(cos 4x)2
	$f'(\frac{\pi}{4}) = (2 \cos \frac{\pi}{2} + \sin \frac{\pi}{4})(\cos \pi) - (\sin \frac{\pi}{2} - \cos \frac{\pi}{4})(-a \sin \pi)$
	(COS T)2
	$= (2.0 + \frac{1}{2} \sqrt{2}) (-1)$
	(-1)2
	$= -\frac{1}{2} \sqrt{2}$
	Y 91,
□ 7.	Turunan dari $f(x) = \cot(x^2 + 2)$ adalah
	Sec (x2+2)
	$U = (0t(x^2+2) \rightarrow U' = -2x csc^2(x^2+2)$
	b = sec (x2+2) -> b = 2x sec (x2+2) tan (x2+2)
	The state of the s
	$f'(x) = U'U - UU'$ - $(2x \sec(x^2+2)x)$
	0 2
	$f'(x) = -2x \csc^2(x^2+2) \cdot \sec(x^2+2) - \cot(x^2+2) \cdot 2x \sec(x^2+2) \tan(x^2+2)$
	sec2 (x2 +2)
	= $-2x \sec(x^2+2) \left[\csc^2(x^2+2) + 1 \right]$
	sec2 (x2+2)
	$= -2 \times \left[(SC^{2}(X^{2} + 2) + 1) \right]$
	sec (x2+2)
	LATIHAN SOAL VIDEO
	25 12 (2) Ed.

	Cari turunan pertama fungsi benkut!
	$f(x) = \cos x$
	SINX
	$u = \cos x - u' = -\sin x$
	1 = SINX -> 121 = COSX
	f'(x) = u'u - uv'
	U ²
,	= (-sinx)(sinx) - (cosx)(cosx)
	(sinx)2
	= -sin2 x - cos2 x (dikali -1)
	sin x 2
	$= \sin^2 X + \cos^2 X$
	SINXZ
	SINX2
	The state of the s
2.	$f(x) = 1 - \sin x$
	2 + cotx
	u = 1-1111X -> U1 = -cosx
	$U = 2 + COSX \rightarrow U' = -SINX$
	f'(x) = u'v - uv'
	V 2
	= (-cosx) (2+cosx) - (1-sinx) (-sinx)
	(2 + coix)2
	= -2 cosx - cos2 x - (-s1nx + s1n2x)
	(2+cosx)~
	$= -2\cos x - \cos^2 x + \sin x + \sin^2 x$
	(2 + cosx)2
3.)	$f(x) = \sin x$
	sinx +cosx

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		•
	u = sin x -) $u' = cos x$	•
	$A = 2U \times t \cos x - A + A + \cos x - A + A + A + A + A + A + A + A + A + A$	
	f'(x) = u' v - uv'	
	UZ	
	$f'(x) = (\cos x)(\sin x + \cos x) - (\sin x)(\cos x - \sin x)$	()
	(sinx + cos x)2	
	= COSX SHAX + COS2X - SINX COSX + SIN	2 X
	(SINX + COSX)2	
	$= cos^2x + sin^2x$	
	(SINX + COSX)2	
	= 1	
	(sin x +cosx)~	7 11
	to the second of	
4.	$f(x) = 1 + \sin x$	
	VX	
	u = 1 + sinx - , u' = cos x	/ ₂ · ' · ·
	$V = Vx \rightarrow V' = \frac{1}{2Vx}$	
	The second of the end of the second of the s	
	f'(x) = u'v - uv'	
	02	w, 7 ()
	= (cosx)(Vx) - (1+sinx)(1Vx)	
	(Vx)2	
	= VXCOSX - ZVX SINX	
	×	
	$= \frac{2 \times \cos x - 1 - \sin x}{2 \sqrt{x}}$	113 11812
	X	
	= 2x cosx - 1 - sinx	
	2× VX	'd .
5.	$f(x) = x^2 + tan 2x$	· · · · · · · · · · · · · · · · · · ·
	3 x + 2 tqn x	
		Big frame for for good for

	Date:
	u: x² + tan 2x -> u' = 2x + 2 sec² 2x
	$v = 3x + 2 \tan x - v' = 3 + 2 \sec^2 x$
	f'(x) = u'v - uv'
	V 2
$\overline{}$	f'(x) = (2x + 2sec22x)(3x+2+anx) - (x2+tan2x)(3+2sec2x)
	$(3x + \tan x)^2$
	f'(x) = 6x2+ 4x+anx+6 sec2x+4 sec2x+anx -x2-3+an2x-2+an2xec2x
	(3x + tan x)2
	f'(x) = 5x2+ 9x tanx + 6 sec2 2x + 9 sec2 2x + fanx - 3 fan 2x - 2 fanzx sec2x
	(3x +tanx)2
6.	$f(x) = 4\cos(x - 2\sin x)$
	5 cosx + 3 sinx
	$U = 4\cos x - 2\sin x \rightarrow -4\sin x - 2\cos x$
	0 = 5 cosx + 351nx -> -5 51nx + 3 cosx
	f'(x) = U'V - UV'
	U2
	{ (x) = (-4sinx -2coix) (scosx+3sinx)-(4cosx-2sinx)(-ssinx+3cosx)
	(5 COSX + 351Nx)2
	f(x) = -135HM2X-125IN2X-10COS2X + 135HM2X-2COS2X +10
	(5 cosx + 35 lnx)2
	$= -12 \sin^2 x - 12 \cos^2 x + 10$
	(2 COZX + 321NX) r
(1 .)	
	$f(x) = x \sin x$
	V = X SIN X
	X // V/X - / U = X (0) X
	$f'(x) = \alpha \cdot \beta - \alpha \cdot \beta$ $f'(x) = \alpha \cdot \beta - \alpha \cdot \beta$ $f'(x) = \alpha \cdot \beta - \alpha \cdot \beta$
	V 2 40

	Date:
	$f'(\dot{x}) = (x \cos x)(\cos x + \sin x) - (x \sin x)(-\sin x + \cos x)$
	(cosx + anx)2
	$f'(X) = X \cos^2 X + X \cos X \sin X + X \sin^2 X - X \sin X \cos X$
	$(\cos x + \sin x)^2$
	$f'(X) = X \cos^2 X + X \sin^2 X$
	(coix +sinx)2
	$f'(x) = x \left((0s^2 x + sin^2 x) - x (i) \right)$
	(cosx + sinx)2
	$f(x) = X \times X$
	(cos +sinx)2
8.	$f(x) = gx^2 \sin^2 x + q$
	XSINX
	u = gx2 sin2x+9 -> u' = 18 x ((052x)(251nx)
	0 = × 11 NX -> 01 = × cos x
	f'(x) = u'v - uv'
	02
	f(x) = 18 x (cos2x)(251Nx) (x51Nx) - (9x251N2x+4) (xcosx)
	(XSINX)2
	f((x) = 36 x2 cos2 x sin2x - 9x3 sin2x cosx - 4 x cosx
	(xsinx)2
9.	$f(x) = \sqrt{\sec x + \tan x}$
	V secx - tanx
	$f(x) = \sqrt{(sec x + tan x)}$
	$\sqrt{(secx - tanx)}$
	$U = \sqrt{secx + tanx} = \lambda U' = \frac{1}{2} \left(secx \cdot tanx + sec^2x \right)^{-\frac{1}{2}}$
	$\theta = \sqrt{sec \times - tan \times} = 1$ $\theta' = \frac{1}{2} \left(sec \times tan \times - sec^2 \times \right)^{-\frac{1}{2}}$
	f'(x) = u'v - uv'
	02
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	((x):	o Veocx tan	x+sec=x)(VI	ecx-tanx	- (VIECX	ttan,
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	and the second section of the second	2.15 corx	tanx - sec2x			The state of the s
		(- U) (C) .		x-tanx	1 6	and the second second second second
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