(1) The solution set of the inequality $|x-1| \leq 5$ is

A) $[-4,6]$
B) $[-2,4]$
C) $[-1,3]$
D) $[-3,5]$

(2) The solution set of the equality $|x-1| = 3$ is

A) $\{-4,6\}$
B) $\{-1,3\}$
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D) $\{-3,5\}$

(3) The domain of the function $f(x) = \sqrt{5-x}$

A) $(-\infty,-5]$
B) $(-\infty,5]$
C) $[5,\infty)$
D) $[-5,\infty)$

(4) The equation of the line with slope 1 and y-intercept -2 is

A) $y = -x+2$
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(5) If $f(x) = x^5$ and $g(x) = \log_5 x$, then the domain of the function $f+g$

A) $(5,\infty)$
B) $[0,\infty)$
C) $(0,\infty)$
D) $\mathbb{R}$

(6) $\frac{2\pi}{3} =$

A) 120°
B) 270°
C) 300°
D) 150°

(30) $\log_5 1 =$

A) 5
B) 0
C) 3
D) 1

(31) The absolute maximum point of the function $f(x) = 2x^2 - 8x + 4$ in $[0,3]$ is

A) $(0,4)$
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(33) The critical numbers of the function $f(x) = x^3 - 6x^2 + 9x + 2$ are

A) $-3, 3$
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A) $(1,3)$
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B) $(3,2)$
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(38) The graph of the function $f(x) = x^3 - 6x^2 + 9x + 2$ is concave upward on

A) $(-\infty,2)$
B) $(2,\infty)$
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D) $(-\infty,-2)$

10] $f(x) = \frac{\cos x}{x^2 - 16}$

$x^2 - 16 \neq 0$

$x^2 \neq 16$

$x \neq \{4, -4\}$

11] $\lim_{x \to -1} = ?$

$\lim_{x \to -1^+} = 1$ right continuous

$\lim_{x \to -1^-} 1$

12] $y = (x-4)(x+5)$

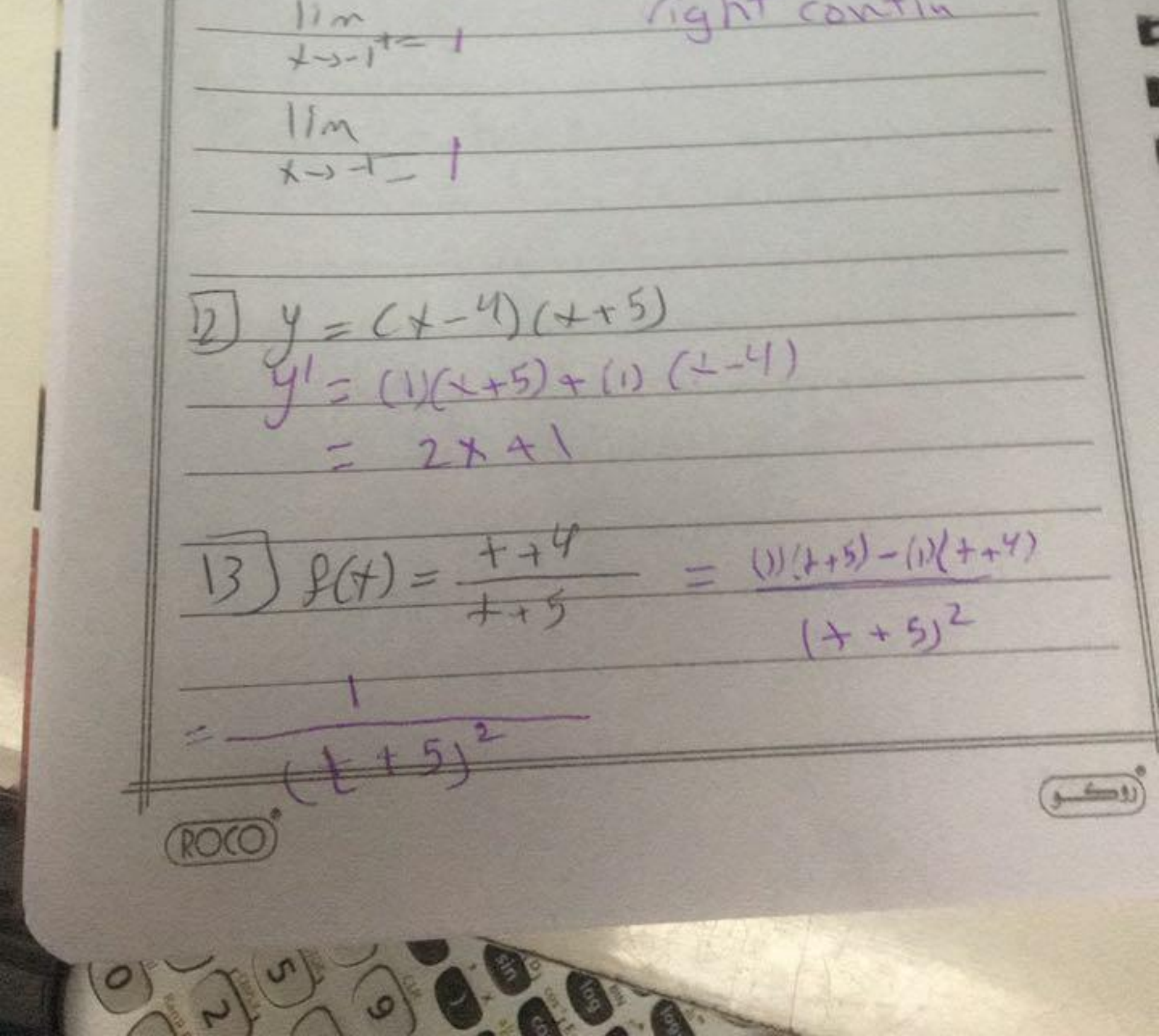
$y' = (1)(x+5) + (1)(x-4)$

$= 2x + 1$

13] $f(x) = \frac{x+4}{x+5} = \frac{(1)(x+5) - (1)(x+4)}{(x+5)^2}$

$= \frac{1}{(x+5)^2}$

ROCO



(21) If $f(x)=\sec(e^x)$, then $f'(x)=$

A) $\tan(e^x)\sec(e^x)$

B) $-e^x\tan(e^x)\sec(e^x)$

C) $e^x\tan(e^x)\sec(e^x)$

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B) $\cos x\left(2^{\sin x}\right)+\frac{1}{x}$

C) $-\cos x\left(2^{\sin x}\right)\ln 2+\frac{1}{x}$

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(23) The inverse function of the function $f(x)=1-2x$ is

A) $\frac{1-x}{2}$

B) $\frac{x-1}{2}$

C) $-\frac{x+1}{2}$

D) $\frac{x+1}{2}$

(24) If $5^{2x-4}=25$, then $x=$

A) 6

B) 3

C) 5

D) 4

(25) If $\log_5(x-3)=1$, then $x=$

A) 7

B) 5

C) 6

D) 8

(26) $\log_2 32+2\log_2 16-2\log_2 8=$

A) 7

B) 10

C) 11

D) 6

(27) $\log_6 30-\log_6 5=$

A) 3

B) 1

C) 2

D) 4

(28) If $e^{x-4}=1$, then $x=$

A) -3

B) 3

C) 4

D) -4

(29) If $y=x-\csc x$, then $y'=$

A) $1-\csc x\cot x$

B) $-1-\csc x\cot x$

C) $-1+\csc x\cot x$

D) $1+\csc x\cot x$

21] $f(x) = \sec(e^x)$

$= \sec(e^x)\tan(e^x) \cdot e^x$

$= e^x \sec(e^x)\tan(e^x)$

22] $g(x) = 2^{\sin x} + \ln x$

~~$g'(x) = 2^{\sin x} \ln 2$~~

$g(x)' = (2^{\sin x} \cdot \ln 2 \cdot \cos x) + \frac{1}{x}$

$= \cos x (2^{\sin x}) \ln 2 + \frac{1}{x}$

23] $f(x) = 1 - 2x$

$y = 1 - 2x$

$y - 1 = 2x$

$\frac{y-1}{2} = x$

$f(x)^{-1} - y = \frac{x-1}{2}$

24] $5^{2x-4} = 25$

$5^{2x-4} = 5^2$

$2x - 4 = 2$

$2x = 6$

$\boxed{x = 3}$

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A) $1-\csc x\cot x$

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(14) If $y = \frac{1}{1+\sin x}$, then $y' =$

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(15) The tangent line equation to the curve $y = x^2$ at the point $(-2,-1)$ is

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(16) If $f(x) = \tan(x^3)$, then $f'(x) =$

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(17) If $y = \sqrt{2x + x^2}$, then $\frac{dy}{dx} =$

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(18) If $y = x^2 - \cos x$, then $y'' =$

A) $2 - \cos x$

B) $2 - \sin x$

C) $2 + \cos x$

D) $2 + \sin x$

(19) If $y = \ln(x^2 + \sin x)$, then $\frac{dy}{dx} =$

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(20) If $x^2 + y^2 = -2x$, then $y' =$

A) $y' = \frac{x+1}{y}$

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C) $y' = \frac{x-1}{y}$

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(7) If $\cos\theta = \frac{3}{5}$, where $\frac{3\pi}{2} < \theta < 2\pi$, then $\cot\theta =$

A) $-\frac{4}{3}$

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A) 4

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25] $\log_5(x-3) = 1$

$5^1 = x - 3$

$5 + 3 = x$

$\boxed{x = 8}$

26] $\log_2 32 + 2\log_2 18 - 2\log_2 8$

$= \log_2 2^5 + 2\log_2 2^4 - 2\log_2 2^3$

$= 5 + 2(4) - 2(3)$

$= 5 + 8 - 6 = 7$

27] $\log_6 30 - \log_6 5$

$\log_6 \frac{30}{5} = \log_6 6 = 1$

28] $e^{x-4} = 1$

$\ln e^{x-4} = \boxed{\ln 1}$ تأخذ لن من

$x - 4 = 0$

$\boxed{x = 4}$

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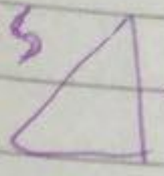
6] $\frac{2\pi}{3} \times \frac{60}{\pi} = 120$

7] $\cos\theta = \frac{\text{المجاور}}{\text{الوتر}} = \frac{3}{5}$



$25 = 9 + x^2$

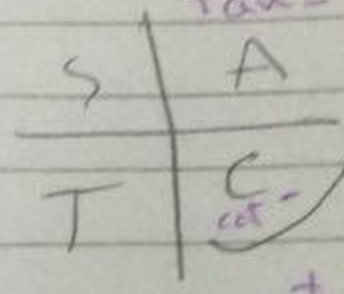
$25 - 9 = x^2$

$\sqrt{16} = \sqrt{x^2}$

$x = 4$

$\cot\theta = 3?$

$\tan = \frac{4}{3}$



$\cot = \frac{-3}{4}$

8] $\lim_{x \to 1} \frac{x^2 + x - 2}{x - 1} =$

$= \frac{(x+1)(x+2)}{x} = 3$

9] $\lim_{x \to \infty} \frac{3x^3 + 2x + 4}{2x^2 + 5x + 6}$

المقام أكبر من البسط

يعني ∞ ذكتور أول

$\frac{\text{بسط}}{\text{مقام}} = \frac{\infty}{\infty} = 0$

$\frac{\frac{3x^3}{x^2} + \frac{2x}{x^2} + \frac{4}{x^2}}{\frac{2x^2}{x^2} + \frac{5x}{x^2} + \frac{6}{x^2}}$

$= \frac{3x + \frac{2}{x} + \frac{4}{x^2}}{2 + \frac{5}{x} + \frac{6}{x^2}} = \frac{3x}{2} = \frac{3\infty}{2} = \infty$

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$$f(x) = x^3 - 6x^2 + 9x + 2$$

38] concave up: $(2, \infty)$

39] concave down: $(-\infty, 2)$

$f(x)' : 3x^2 - 12x + 9$

$f(x)'' : 6x - 12$ ← نقطة

0		1		3
	−	2	+	

$6x - 12 = 0$

$6x = 12$

$\boxed{x = 2}$

40] inflection point: $(2, \frac{\text{---}}{4})$

$f(x)'' = 6x - 12$

$6x - 12 = 0$

$6x = 12$

$\boxed{x = 2}$ نعوض في الأصلية

(39) The graph of the function $f(x)=x^3-6x^2+9x+2$ is concave downward on

A) $(-\infty,2)$

B) $(-2,\infty)$

C) $(2,\infty)$

D) $(-\infty,-2)$

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A) $(-2,4)$

B) $(2,0)$

C) $(-2,0)$

D) $(2,4)$

Best Wishes

18 $y = x^2 - \cos x \qquad y'' = ?$

$y' = 2x + \sin x$

$y'' = 2 + \cos x$

19 $y = \ln(x^2 + \sin x)$

$y' = \dfrac{2x + \cos x}{x^2 + \sin x}$

20 $x^2 + y^2 = -2x \qquad y' = ?$

$2x + 2y\,y' = -2$

$2y\,y' = -2 - 2x$

$y' = \dfrac{-2-2x}{2y}$

$y' = \dfrac{-2(1+x)}{2y}$

$y = \dfrac{x+1}{y}$

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1] $|x-1| \leq 5$

$-5 \leq x-1 \leq 5$

$-4 \leq x \leq 6$

$[-4, 6]$

2] $|x-1| = 3$

$x-1=3$ $\quad x-1=-3$

$x=4$ $\quad x=-2$

$\{4, -2\}$

3] $f(x) = \sqrt{5-x}$

$5-x \geq 0$

$5 \geq x$

$(-\infty, 5]$

4] slop 1 $\quad y=-2$

$y = x-2$

5] $f+g$ $\quad$ domain

$x^5 + \log_5 x$ $\quad$ So, $(0, \infty)$

$\widetilde{R} \quad \widetilde{[0, \infty)}$

(39) The graph of the function $f(x)=x^3-6x^2+9x+2$ is concave downward on

A) $(-\infty,2)$

B) $(-2,\infty)$

C) $(2,\infty)$

D) $(-\infty,-2)$

(40) The function $f(x)=x^3-6x^2+9x+2$ has an inflection point at

A) $(-2,4)$

B) $(2,0)$

C) $(-2,0)$

D) $(2,4)$

Best Wishes

التاريخ / / ١٤ اليوم عنوان الدرس

$$f(x) = x^3 - 6x^2 + 9x + 2$$

33) critical points

$$f(x)' = 3x^2 - 12x + 9$$

$$3x^2 - 12x + 9 = 0$$

$$\frac{3}{3}(x^2 - 4x + 3) = \frac{0}{3}$$

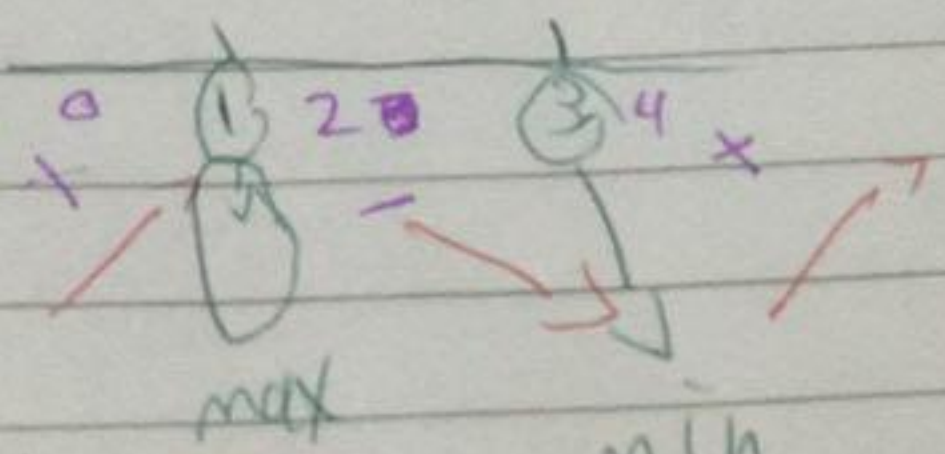
$$(x-3)(x-1) = 0$$

$$x = (3, 1)$$

34] increasing : $(-\infty, 1) \cup (3, \infty)$

35] decreasing : $(1, 3)$

الاشارة



للنوض في الأمثلة

36] (1 و 5)

37] (3 و 2)

عنوان الدرس _____ اليوم _____ التاريخ / / ١٤

14] $y = \frac{1}{1+\sin x}$

$y' = -\frac{\cos x}{(1+\sin x)^2}$

15] $y = x^2 \quad (-2, -1)$

$y' = 2x \rightarrow m = 2(-2) = -4$

$y = -4(x+2) - 1$

$y = -4x - 8 - 1$

$y = -4x - 9$

16] $f(x) = \tan(x^3)$

$f(x)' = \sec^2(x^3) \cdot 3x^2$

$= 3x^2 \sec^2(x^3)$

17] $y = \sqrt{2x + x^2}$

$y' = \frac{2 + 2x}{2\sqrt{2x+x^2}} = \frac{2(1+x)}{2\sqrt{2x+x^2}} = \frac{1+x}{\sqrt{2x+x^2}}$

ROCO

روكو

29) $y = x - \csc x$

$y' = 1 - (-\csc x \cot x)$

$= 1 + \csc x \cot x$

30) $\log_5 1 = 0$ $\log_a 1 = 0$

$f(x) = 2x^2 - 8x + 4 \quad [0,3]$

31) $f(x)' = 4x - 8$

$4x - 8 = 0$

$4x = 8$

$x = 2$

متوضيح الحالة

$f(0) = 4 \quad (0,4)$

$f(3) = -2 \quad (3,-2)$

$f(2) = -4 \quad (2,-4)$

31) max abs $= (0,4)$

32) min abs $= (2,-4)$

حلول اسئلة المراجعه الشامل 201802

حلول اسئلة المراجعه MATH 101									
1-C	11-D	21-C	31-B	41-D	51-B	61-D	71-A	81-B	91-A
2-D	12-B	22-B	32-D	42-C	52-C	62-A	72-D	82-B	92-D
3-B	13-C	23-D	33-C	43-A	53-A	63-C	73-B	83-D	93-D
4-A	14-D	24-A	34-B	44-D	54-D	64-B	74-C	84-B	94-A
5-B	15-A	25-D	35-B	45-C	55-A	65-C	75-D	85-D	95-B
6-C	16-B	26-C	36-A	46-A	56-B	66-D	76-B	86-C	96-D
7-A	17-A	27-A	37-D	47-B	57-A	-67-	77-C	87-A	97-C
8-D	18-B	28-B	38-B	48-B	58-B	68-A	78-A	88-D	98-B
9-B	19-C	29-A	39-C	49-A	59-C	69-D	79-B	89-D	99-A
10-C	20-D	30	40-A	50-D	60-B	70-B	80-C	90-C	100-D

C