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

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

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

A) $\{-4,6\}$	C) $\{-2,4\}$
B) $\{-1,3\}$	D) $\{-3,5\}$

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

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

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

A) $y=-x+2$	C) $y=-x-2$
B) $y=x+2$	D) $y=x-2$

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

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

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

A) 120°	C) 300°
B) 270°	D) 150°

(7) If $\cos\theta = \frac{3}{5}$, where $\frac{3\pi}{2} < \theta < 2\pi$, then $\cot\theta =$	
A) $-\frac{4}{3}$ B) $\frac{4}{3}$	C) $\frac{3}{4}$ D) $-\frac{3}{4}$

(8) $\lim_{x \to 1} \frac{x^2 + x - 2}{x - 1} =$	
A) 4 B) 3	C) 6 D) 5

(9) $\lim_{x \to +\infty} \frac{3x^3 + 2x + 4}{2x^2 + 5x + 6} =$	
A) ∞ B) 0	C) $\frac{3}{2}$ D) $-\infty$

(10) The function $f(x) = \frac{\cos x}{x^2 - 16}$ is continuous on	
A) $\mathbb{R} - \{-4\}$ B) $\mathbb{R} - \{-4, 4\}$	C) $\mathbb{R}$ D) $\mathbb{R} - \{4\}$

(11) The function $f(x) = \begin{cases} 3x + 4, & x \geq -1 \\ 4 - 3x, & x < -1 \end{cases}$ is	
A) neither left nor right continuous at $x = -1$ B) continuous at $x = -1$	C) right continuous only at $x = -1$ D) left continuous only at $x = -1$

(12) If $y = (x - 4)(x + 5)$, then $\frac{dy}{dx} =$	
A) $2x + 9$ B) $2x - 9$	C) $2x - 1$ D) $2x + 1$

(13) If $f(t) = \frac{t + 4}{t + 5}$, then $f'(t) =$	
A) $-\frac{1}{(t - 5)^2}$ B) $\frac{1}{(t + 5)^2}$	C) $-\frac{9}{(t - 5)^2}$ D) $\frac{9}{(t + 5)^2}$

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

A) $-\dfrac{\cos x}{(1+\sin x)^2}$

B) $\dfrac{\cos x}{(1+\sin x)^2}$

C) $-\dfrac{\cos x}{(1-\sin x)^2}$

D) $\dfrac{\cos x}{(1-\sin x)^2}$

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

A) $y=4x-9$

B) $y=-4x-7$

C) $y=4x-7$

D) $y=-4x-9$

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

A) $3x\sec^2\left(x^3\right)$

B) $3x^2\sec\left(x^3\right)$

C) $3x^2\sec^2\left(x^3\right)$

D) $3x\sec\left(x^3\right)$

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

A) $\dfrac{1+x}{\sqrt{2x+x^2}}$

B) $\dfrac{1+x}{2\sqrt{2x+x^2}}$

C) $\dfrac{x}{2\sqrt{2x+x^2}}$

D) $\dfrac{1}{2\sqrt{2x+x^2}}$

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

$y' = 2x + \sin$

$y'' =$

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 $\dfrac{dy}{dx}=$

A) $\dfrac{2x-\cos x}{x^2+\sin x}$

B) $\dfrac{2x+\cos x}{x^2+\sin x}$

C) $\dfrac{\cos x}{x^2+\sin x}$

D) $\dfrac{1}{x^2+\sin x}$

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

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

B) $y'=\dfrac{1-x}{y}$

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

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

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

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

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

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

D) $-\tan\left(e^x\right)\sec\left(e^x\right)$

(22) If $g(x) = 2^{\sin x} + \ln x$, then $g'(x) =$

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

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

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

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

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

(30) $\log_5 1 =$	
A) 5	C) 3
B) 0	D) 1

(31) The absolute maximum point of the function $f(x)=2x^2-8x+4$ in $[0,3]$ is	
A) $(0,4)$	C) $(2,-6)$
B) $(2,-4)$	D) $(0,2)$

(32) The absolute minimum point of the function $f(x)=2x^2-8x+4$ in $[0,3]$ is	
A) $(2,-6)$	C) $(2,-4)$
B) $(0,2)$	D) $(0,4)$

(33) The critical numbers of the function $f(x)=x^3-6x^2+9x+2$ are	
A) $-3, 3$	C) $-1, 1$
B) $-3, -1$	D) $1, 3$

(34) The function $f(x)=x^3-6x^2+9x+2$ is increasing on	
A) $(1,3)$	C) $(-\infty,1)\cup(3,\infty)$
B) $(-3,-1)$	D) $(-\infty,-3)\cup(-1,\infty)$

(35) The function $f(x)=x^3-6x^2+9x+2$ is decreasing on	
A) $(-\infty,-3)\cup(-1,\infty)$	C) $(-3,-1)$
B) $(1,3)$	D) $(-\infty,1)\cup(3,\infty)$

(36) The function $f(x)=x^3-6x^2+9x+2$ has a local maximum at the point	
A) $(-3,2)$	C) $(1,6)$
B) $(3,2)$	D) $(-1,-2)$

(37)) The function $f(x)=x^3-6x^2+9x+2$ has a local minimum at the point	
A) $(3,2)$	C) $(-3,2)$
B) $(-1,-2)$	D) $(1,6)$

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

(39) The graph of the function $f(x)=x^3-6x^2+9x+2$ is concave downward on	
A) $(-\infty,2)$	C) $(2,\infty)$
B) $(-2,\infty)$	D) $(-\infty,-2)$

(40) The function $f(x)=x^3-6x^2+9x+2$ has an inflection point at	
A) $(-2,4)$	C) $(-2,0)$
B) $(2,0)$	D) $(2,4)$

Best Wishes