General Revision on Chapter Preliminaries

Q1: The solution set of the inequality $3x+5\le 8$ is			
A) $(-\infty,1)$	B) $(-\infty,1]$	C) $[1,\infty)$	D) $(1,\infty)$

Q2: The solution set of the inequality $5x-3>7-3x$ is			
A) $\left(-\infty,\frac{5}{4}\right)$	B) $\left[\frac{5}{4},\infty\right)$	C) $\left(\frac{5}{4},\infty\right)$	D) $\left(-\infty,\frac{5}{4}\right]$

Q3: The solution set of the inequality $2<3x-4\le 5$ is			
A) $(2,3]$	B) $[2,3)$	C) $(2,3)$	D) $[2,3]$

Q4: The solution set of the inequality $x^2<9$ is			
A) $(-\infty,-3)\cup(3,\infty)$	B) $[-3,3]$	C) $(-\infty,-3]\cup[3,\infty)$	D) $(-3,3)$

Q5: The solution set of the inequality $x^2\ge 9$ is			
A) $(-\infty,-3)\cup(3,\infty)$	B) $[-3,3]$	C) $(-\infty,-3]\cup[3,\infty)$	D) $(-3,3)$

Q6: The solution set of the inequality $x^2-2x\le 0$ is			
A) $(-\infty,0)\cup(2,\infty)$	B) $(0,2)$	C) $(-\infty,0]\cup[2,\infty)$	D) $[0,2]$

Q7: The solution set of the inequality $x^2-8x+12\ge 0$ is			
A) $(-\infty,2]\cup[6,\infty)$	B) $[2,6]$	C) $(-\infty,3]\cup[4,\infty)$	D) $[3,4]$

Q8: The solution set of the equality $\lvert x-3\rvert=7$ is			
A) $\{4,10\}$	B) $\{-4,10\}$	C) $\{-10,-4\}$	D) $\{-10,4\}$

Q9: The solution set of the inequality $\lvert 2x+5\rvert\ge 7$ is			
A) $(-6,1)$	B) $(-\infty,-6)\cup(1,\infty)$	C) $(-\infty,-6]\cup[1,\infty)$	D) $[-6,1]$

Q10: The solution set of the inequality $\lvert 3x-7\rvert<2$ is			
A) $\left(\frac{5}{3},3\right)$	B) $\left(-\infty,\frac{5}{3}\right)\cup(3,\infty)$	C) $\left(-\infty,\frac{5}{3}\right]\cup[3,\infty)$	D) $\left[\frac{5}{3},3\right]$

Q11: The distance between the two points $(0,3)$ and $(4,0)$ is			
A) $\sqrt{50}$	B) $\sqrt{10}$	C) 25	D) 5

Q12: The distance between the two points $(3,2)$ and $(-1,-2)$ is			
A) $\sqrt{32}$	B) $\sqrt{8}$	C) 4	D) $\sqrt{18}$

Q13: The equation of the vertical line passes through the point $(-2,5/3)$ is			
A) $x=5/3$	B) $y=-2$	C) $y=5/3$	D) $x=-2$

Q14: The equation of the horizontal line passes through the point $(-2,5/3)$ is			
A) $x=5/3$	B) $y=-2$	C) $y=5/3$	D) $x=-2$

Q15: The slope of the equation of the line $2y-5x+7=0$ is			
A) $\frac{5}{2}$	B) $-\frac{5}{2}$	C) $\frac{2}{5}$	D) $-\frac{2}{5}$

Q16: The equation of the line with slope -6 and y-intercept 5 is			
A) $y=-6x+5$	B) $y=6x+5$	C) $y=-6x-5$	D) $y=6x-5$

Q17: The y-intercept of the equation of line $x+2y=-4$ is			
A) 2	B) -2	C) 4	D) -4

Q18: The x-intercept of the equation of line $x+2y=-4$ is			
A) 2	B) -2	C) 4	D) -4

Q19: The slope of the line through the points $(4,1)$ and $(-2,3)$ is			
A) -3	B) $1/3$	C) $-1/3$	D) 3

Q20: The equation of the line through the point $(-1,1)$ with slope 1 is			
A) $y=-x+2$	B) $y=x-2$	C) $y=x+2$	D) $y=-x-2$

Q21: The equation of the line through the point $(1,2)$ with slope 5 is			
A) $y=-5x+3$	B) $y=5x+3$	C) $y=-5x-3$	D) $y=5x-3$

Q22: The equation of the line through the points $(4,1)$ and $(-2,3)$ is			
A) $x+3y+7=0$	B) $x+3y-7=0$	C) $x-3y-7=0$	D) $x-3y+7=0$

Q23: The equation of the line passes through the point $(2,1)$ and parallel to the line $y = x + 2$ is			
A) $y = x + 1$	B) $y = x - 1$	C) $y = -x + 3$	D) $y = x - 3$

Q24: The equation of the line passes through the point $(2,1)$ and perpendicular to the line $y = x + 2$ is			
A) $y = x + 1$	B) $y = x - 1$	C) $y = -x + 3$	D) $y = x - 3$

Q25: The equation of the line passes through the point $(-2,2)$ and parallel to the line $2x + y = 4$ is			
A) $2x + y = -2$	B) $2x + y = 2$	C) $x - 2y = 6$	D) $x - 2y = -6$

Q26: The equation of the line passes through the point $(-2,2)$ and perpendicular to the line $2x + y = 4$ is			
A) $2x + y = -2$	B) $2x + y = 2$	C) $x - 2y = 6$	D) $x - 2y = -6$

Q27: If the graph of $y = 1 - x^2$ is shifting to the left 1 unit and then it is shifting downward 1 unit, thus the new graph can be represented by			
A) $y = (x + 1)^2$	B) $y = -(x + 1)^2$	C) $y = -(x - 1)^2$	D) $y = (x - 1)^2$

Q28: If the graph of $y = \sqrt{x}$ is shifting to the right 4 units and then it is shifting downward 2 units, thus the new graph can be represented by			
A) $y = \sqrt{x + 4} - 2$	B) $y = \sqrt{x - 4} + 2$	C) $y = \sqrt{x + 4} + 2$	D) $y = \sqrt{x - 4} - 2$

Q29: If the graph of $y = \sqrt{x}$ is shifting to the left 4 units and then it is shifting upward 2 units, thus the new graph can be represented by			
A) $y = \sqrt{x + 4} - 2$	B) $y = \sqrt{x - 4} + 2$	C) $y = \sqrt{x + 4} + 2$	D) $y = \sqrt{x - 4} - 2$

Q30: The domain of the function $f(x) = \sqrt{8 - 2x}$ is			
A) $(-\infty, 4)$	B) $(-\infty, 4]$	C) $(4, \infty)$	D) $[4, \infty)$

Q31: The domain of the function $f(x) = \dfrac{1}{x - 1}$ is			
A) $\mathbb{R}$	B) $\mathbb{R} - \{0\}$	C) $\mathbb{R} - \{-1\}$	D) $\mathbb{R} - \{1\}$

Q32: The domain of the function $g(t) = \dfrac{t}{\sqrt{2 - t}}$ is			
A) $(2, \infty)$	B) $(-\infty, 2]$	C) $(-\infty, 2)$	D) $[2, \infty)$

Q33: The domain of the function $f(x)=\frac{3x+5}{x^2-x-12}$ is			
A) $\mathbb{R}-\{3,4\}$	B) $\mathbb{R}-\{-4,3\}$	C) $\mathbb{R}-\{-3,4\}$	D) $\mathbb{R}-\{-4,-3\}$

Q34: The domain of the function $f(x)=\sqrt{x^2-4}$ is			
A) $(-\infty,-2)\cup(2,\infty)$	B) $[-2,2]$	C) $(-2,2)$	D) $(-\infty,-2]\cup[2,\infty)$

Q35: The function $f(x)=x^2+1$ is			
A) even	B) neither even nor odd	C) odd	D) even and odd

Q36: The function $f(x)=x^3+x$ is			
A) even	B) neither even nor odd	C) odd	D) even and odd

Q37: The function $f(x)=\frac{1}{x^2-1}$ is			
A) even	B) neither even nor odd	C) odd	D) even and odd

Q38: The function $f(x)=x^3-2$ is			
A) even	B) neither even nor odd	C) odd	D) even and odd

Q39: The function $f(x)=\frac{x}{x^2-1}$ is			
A) even	B) neither even nor odd	C) odd	D) even and odd

Q40: The function $f(x)=x^2-6x$ is			
A) even	B) neither even nor odd	C) odd	D) even and odd

Q41: If $f(x)=x$ and $g(x)=\sqrt{x-1}$, then the domain of the function $f+g$ is			
A) $[1,\infty)$	B) $(-\infty,1]$	C) $\mathbb{R}$	D) $(1,\infty)$

Q42: If $f(x)=x$ and $g(x)=\sqrt{x-1}$, then the domain of the function f/g is			
A) $[1,\infty)$	B) $(-\infty,1]$	C) $\mathbb{R}$	D) $(1,\infty)$

Q43: If $f(x)=x$ and $g(x)=\sqrt{x-1}$, then the domain of the function $f \bullet g$ is			
A) $\mathbb{R}$	B) $(-\infty,1]$	C) $[1,\infty)$	D) $(1,\infty)$

Q44: If $f(x)=x$ and $g(x)=\sqrt{x-1}$, then the domain of the function $f-g$ is			
A) $(-\infty,1]$	B) $\mathbb{R}$	C) $(1,\infty)$	D) $[1,\infty)$

Q45: If $f(x)=x+5$ and $g(x)=x^2-3$, then $(f\circ g)(x)=$			
A) x^2+2	B) x^2-2	C) $-x^2+2$	D) $-x^2-2$

Q46: If $f(x)=x+5$ and $g(x)=x^2-3$, then $(g\circ f)(x)=$			
A) $x^2+10x-22$	B) $x^2+10x+22$	C) $x^2-10x+22$	D) $x^2-10x-22$

Q47: If $f(x)=x+5$, then $(f\circ f)(x)=$			
A) x^2+5	B) $x+25$	C) $x+10$	D) x^2+10

Q48: If $f(x)=x+5$ and $g(x)=x^2-3$, then $(f\circ g)(0)=$			
A) 4	B) -2	C) 3	D) 2

Q49: If $f(x)=x+5$ and $g(x)=x^2-3$, then $(g\circ f)(0)=$			
A) 20	B) -22	C) 22	D) 21

Q50: If $f(x)=\dfrac{1}{1-x}$ and $g(x)=\sqrt{x-1}$, then $(f\circ g)(x)=$			
A) $\dfrac{-1}{1-\sqrt{x-1}}$	B) $\dfrac{1}{\sqrt{x-1}}$	C) $\dfrac{1}{1+\sqrt{x-1}}$	D) $\dfrac{1}{1-\sqrt{x-1}}$

Q51: If $f(x)=\dfrac{1}{1-x}$ and $g(x)=\sqrt{x-1}$, then the domain of $f\circ g$ is			
A) $(1,\infty)$	B) $[1,2)\cup(2,\infty)$	C) $[1,\infty)$	D) $\mathbb{R}$

Q52: If $f(x)=\dfrac{1}{1-x}$ and $g(x)=\sqrt{x-1}$, then $(g\circ f)(x)=$			
A) $\sqrt{\dfrac{x}{x-1}}$	B) $\dfrac{x}{\sqrt{x-1}}$	C) $\sqrt{\dfrac{x}{1-x}}$	D) $\dfrac{x}{\sqrt{1-x}}$

Q53: If $f(x)=\dfrac{1}{1-x}$ and $g(x)=\sqrt{x-1}$, then the domain of $g\circ f$ is			
A) $[0,1]$	B) $[0,1)$	C) $(0,1)$	D) $\mathbb{R}$

Q54: If $\lfloor -3.2 \rfloor =$			
A) 3.2	B) –3.2	C) –3	D) –4

Q55: If a circle has radius 3 cm, what is the length of an arc subtended by a central angle of $\frac{2\pi}{3}$ rad ?			
A) $\frac{2\pi}{9}$ cm	B) $\frac{9}{2\pi}$ cm	C) 2π cm	D) $\frac{1}{2\pi}$ cm

Q56: $\frac{5\pi}{3} =$			
A) 120°	B) 270°	C) 300°	D) 150°

Q57: $150^\circ =$			
A) $\frac{7\pi}{6}$	B) $\frac{5\pi}{6}$	C) $\frac{6\pi}{5}$	D) $\frac{7\pi}{5}$

Q58: $\cos\left(\frac{3\pi}{4}\right) =$			
A) $-\sqrt{2}$	B) $\sqrt{2}$	C) $\frac{1}{\sqrt{2}}$	D) $-\frac{1}{\sqrt{2}}$

Q59: $\sin\left(\frac{2\pi}{3}\right) =$			
A) $\frac{1}{2}$	B) $-\frac{\sqrt{3}}{2}$	C) $\frac{\sqrt{3}}{2}$	D) $-\frac{1}{2}$

Q60: $\cos(\pi + x) =$			
A) $-\cos x$	B) $-\sin x$	C) $\cos x$	D) $\sin x$

Q61: $\sin\left(\frac{3\pi}{2} - x\right) =$			
A) $\cos x$	B) $-\sin x$	C) $-\cos x$	D) $\sin x$

Q62: The function $f(x) = \frac{\sin x}{x}$ is			
A) even	B) neither even nor odd	C) odd	D) even and odd

Q63: $\cos^4 x - \sin^4 x =$			
A) $\cos^2 x$	B) 1	C) $\sin 2x$	D) $\cos 2x$

Q64: If $\sin\theta = \frac{3}{5}$, where $\frac{\pi}{2} < \theta < \pi$, then $\tan\theta =$			
A) $-\frac{4}{3}$	B) $\frac{3}{4}$	C) $-\frac{3}{4}$	D) $\frac{4}{3}$

Q65: If $\sin\theta = -\frac{1}{2}$, where $\pi < \theta < \frac{3\pi}{2}$, then $\cos\theta =$			
A) $-\frac{\sqrt{3}}{2}$	B) $\frac{\sqrt{3}}{2}$	C) $-\frac{2}{\sqrt{3}}$	D) $\frac{2}{\sqrt{3}}$

Q66: If $\tan\theta = -\frac{4}{3}$, where $\frac{\pi}{2} < \theta < \pi$, then $\csc\theta =$			
A) $-\frac{5}{4}$	B) $-\frac{5}{3}$	C) $\frac{5}{4}$	D) $\frac{5}{3}$

Q67: If $\sec\theta = \frac{\sqrt{5}}{2}$, where $\frac{3\pi}{2} < \theta < 2\pi$, then $\tan\theta =$			
A) $-\frac{1}{2}$	B) -2	C) $\frac{1}{2}$	D) 2

Q68: $\sec\frac{4\pi}{3} =$			
A) $\frac{2}{\sqrt{3}}$	B) 2	C) -2	D) $-\frac{2}{\sqrt{3}}$

Q69: If $\sin\theta > 0$ and $\cos\theta < 0$, then the angle θ lies in the			
A) first quadrant	B) second quadrant	C) third quadrant	D) fourth quadrant

Q70: $2\sin\frac{\pi}{8}\cos\frac{\pi}{8} =$			
A) $\frac{1}{\sqrt{2}}$	B) $\frac{\sqrt{3}}{2}$	C) $\frac{1}{2}$	D) $-\frac{1}{\sqrt{2}}$