



Q1: The solution set of the inequality $3x + 5 \leq 8$ 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) $(-\infty, \frac{5}{4})$ | B) $[\frac{5}{4}, \infty)$ | C) $(\frac{5}{4}, \infty)$ | D) $(-\infty, \frac{5}{4}]$ |
|-----------------------------|----------------------------|----------------------------|-----------------------------|

Q3: The solution set of the inequality $2 < 3x - 4 \leq 5$ is

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|-------------|-------------|-------------|-------------|
| 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 $x^2 \geq 9$ is

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|-------------------------------------|--------------|-------------------------------------|--------------|
| 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 $x^2 - 2x \leq 0$ is

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|------------------------------------|-------------|------------------------------------|-------------|
| 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 $x^2 - 8x + 12 > 0$ is

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|------------------------------------|-------------|------------------------------------|-------------|
| 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 $|x - 3| = 7$ is

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|----------------|-----------------|------------------|-----------------|
| A) $\{4, 10\}$ | B) $\{-4, 10\}$ | C) $\{-10, -4\}$ | D) $\{-10, 4\}$ |
|----------------|-----------------|------------------|-----------------|

Q9: The solution set of the inequality $|2x + 5| \geq 7$ 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 $|3x - 7| < 2$ is

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|-----------------------|--|--|-----------------------|
| A) $(\frac{5}{3}, 3)$ | B) $(-\infty, \frac{5}{3}) \cup (3, \infty)$ | C) $(-\infty, \frac{5}{3}] \cup [3, \infty)$ | D) $[\frac{5}{3}, 3]$ |
|-----------------------|--|--|-----------------------|

Q11: The distance between the two points $(0, 3)$ and $(4, 0)$ is

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|----------------|----------------|-------|------|
| 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: Equation of the vertical line passing through the point (-2,5) is

A) $x = 5$

B) $y = -2$

C) $y = 5$

D) $x = -2$

Q14: Equation of the horizontal line passing through the point (-2,5) is

A) $x = 5$

B) $y = -2$

C) $y = 5$

D) $x = -2$

Q15: Slope of the following line $2y - 5x + 7 = 0$ is

A) $\frac{5}{2}$

B) $-\frac{5}{2}$

C) $\frac{2}{5}$

D) $-\frac{2}{5}$

Q16: 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 line $x + 2y = -4$ is

A) 2

B) -2

C) 4

D) -4

Q18: The x-intercept of the line $x + 2y = -4$ is

A) 2

B) -2

C) 4

D) -4

Q19: Slope of the line that passes through the points (4,1) and (-2,3) is

A) -3

B) $1/3$

C) $-1/3$

D) 3

Q20: Equation of the line that passes 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: Equation of the line passing 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: Equation of the line passing 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: Equation of the line that 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: Equation of the line that 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: Equation of the line that 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

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|------------------|-----------------|-----------------|------------------|
| 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: Domain of the function $f(x) = \sqrt{8 - 2x}$ is

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|-------------------|-------------------|------------------|------------------|
| A) $(-\infty, 4)$ | B) $(-\infty, 4]$ | C) $(4, \infty)$ | D) $[4, \infty)$ |
|-------------------|-------------------|------------------|------------------|

Q31: Domain of the function $f(x) = \frac{1}{x - 1}$ is

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|-----------------|-------------------------|--------------------------|-------------------------|
| A) \mathbb{R} | B) $\mathbb{R} - \{0\}$ | C) $\mathbb{R} - \{-1\}$ | D) $\mathbb{R} - \{1\}$ |
|-----------------|-------------------------|--------------------------|-------------------------|

Q32: Domain of the function $g(t) = \frac{t}{\sqrt{2 - t}}$ is

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|------------------|-------------------|-------------------|------------------|
| A) $(2, \infty)$ | B) $(-\infty, 2]$ | C) $(-\infty, 2)$ | D) $[2, \infty)$ |
|------------------|-------------------|-------------------|------------------|

Q33: Domain of the function $f(x) = \frac{3x + 5}{x^2 - x - 12}$ is

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|----------------------------|-----------------------------|-----------------------------|------------------------------|
| A) $\mathbb{R} - \{3, 4\}$ | B) $\mathbb{R} - \{-4, 3\}$ | C) $\mathbb{R} - \{-3, 4\}$ | D) $\mathbb{R} - \{-4, -3\}$ |
|----------------------------|-----------------------------|-----------------------------|------------------------------|

Q34: Domain of the function $f(x) = \sqrt{x^2 - 4}$ is

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|-------------------------------------|--------------|--------------|-------------------------------------|
| 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

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|----------------------|---------------------|------------------------------|-----------------------------------|
| A) an even function. | B) an odd function. | C) an even and odd function. | D) neither even nor odd function. |
|----------------------|---------------------|------------------------------|-----------------------------------|

Q36: The function $f(x) = x^3 + x$ is

- | | | | |
|----------------------|---------------------|------------------------------|-----------------------------------|
| A) an even function. | B) an odd function. | C) an even and odd function. | D) neither even nor odd function. |
|----------------------|---------------------|------------------------------|-----------------------------------|

Q37: The function $f(x) = \frac{1}{x^2 - 1}$ is

- | | | | |
|----------------------|---------------------|------------------------------|-----------------------------------|
| A) an even function. | B) an odd function. | C) an even and odd function. | D) neither even nor odd function. |
|----------------------|---------------------|------------------------------|-----------------------------------|

Q38: The function $f(x) = x^3 - 2$ is

- | | | | |
|----------------------|---------------------|------------------------------|-----------------------------------|
| A) an even function. | B) an odd function. | C) an even and odd function. | D) neither even nor odd function. |
|----------------------|---------------------|------------------------------|-----------------------------------|

Q39: The function $f(x) = \frac{x}{x^2 - 1}$ is

- | | | | |
|----------------------|---------------------|------------------------------|-----------------------------------|
| A) an even function. | B) an odd function. | C) an even and odd function. | D) neither even nor odd function. |
|----------------------|---------------------|------------------------------|-----------------------------------|

Q40: The function $f(x) = x^2 - 6x$ is

- | | | | |
|----------------------|---------------------|------------------------------|-----------------------------------|
| A) an even function. | B) an odd function. | C) an even and odd function. | D) neither even nor odd function. |
|----------------------|---------------------|------------------------------|-----------------------------------|

Q41: If $f(x) = x$ and $g(x) = \sqrt{x-1}$, then domain of the function $(f+g)(x)$ is

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|------------------|-------------------|-----------------|------------------|
| A) $[1, \infty)$ | B) $(-\infty, 1]$ | C) \mathbb{R} | D) $(1, \infty)$ |
|------------------|-------------------|-----------------|------------------|

Q42: If $f(x) = x$ and $g(x) = \sqrt{x-1}$, then domain of the function $(f-g)(x)$ is

- | | | | |
|-------------------|-----------------|------------------|------------------|
| A) $(-\infty, 1]$ | B) \mathbb{R} | C) $(1, \infty)$ | D) $[1, \infty)$ |
|-------------------|-----------------|------------------|------------------|

Q43: If $f(x) = x$ and $g(x) = \sqrt{x-1}$, then domain of the function $(f \times g)(x)$ 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 domain of the function $(f/g)(x)$ is

- | | | | |
|------------------|-------------------|-----------------|------------------|
| A) $[1, \infty)$ | B) $(-\infty, 1]$ | C) \mathbb{R} | D) $(1, \infty)$ |
|------------------|-------------------|-----------------|------------------|

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

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|--------------|--------------|---------------|---------------|
| 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 $f(x) = \frac{1}{1-x}$ and $g(x) = \sqrt{x-1}$, then $(f \circ g)(x) =$			
A) $\frac{-1}{1-\sqrt{x-1}}$	B) $\frac{1}{\sqrt{x-1}}$	C) $\frac{1}{1+\sqrt{x-1}}$	D) $\frac{1}{1-\sqrt{x-1}}$

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

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

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

Q54: $\lfloor -3.2 \rfloor =$			
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) an even function.	B) an odd function.	C) an even and odd function.	D) neither even nor odd function.

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

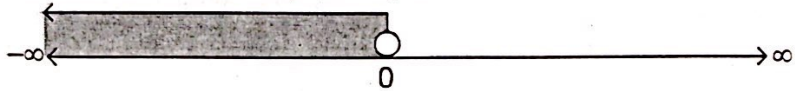
Q69: If $\sin \theta > 0$ and $\cos \theta < 0$, then the angle θ lies in the

A) first quadrant.	B) second quadrant.	C) third quadrant.	D) fourth quadrant.
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Q70: $2\sin\left(\frac{\pi}{8}\right)\cos\left(\frac{\pi}{8}\right) =$

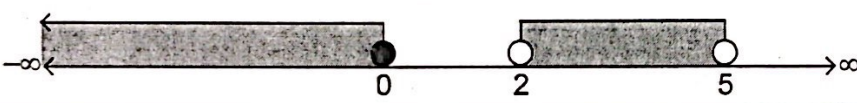
A) $\frac{1}{\sqrt{2}}$	B) $\frac{\sqrt{3}}{2}$	C) $\frac{1}{2}$	D) $-\frac{1}{\sqrt{2}}$
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Q71: Choose the interval that describes the shaded region



A) $(-\infty, 0)$	B) $(-\infty, 0]$	C) $(0, \infty)$	D) $[0, \infty)$
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Q72: Choose the intervals that describe the shaded regions



A) $(-\infty, 0) \cup [2, 5]$	B) $(-\infty, 0] \cup (2, 5)$	C) $(-\infty, 0) \cup [2, 5]$	D) $(-\infty, 0] \cup (2, 5]$
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Q73: $|\cos(150^\circ)| =$

A) $\sqrt{3}$	B) $\frac{1}{\sqrt{3}}$	C) $\frac{2}{\sqrt{3}}$	D) $\frac{\sqrt{3}}{2}$
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Q74: $\sin(30^\circ) \times \tan(45^\circ) =$

A) $\frac{1}{2}$	B) $\frac{1}{\sqrt{2}}$	C) $\frac{1}{\sqrt{3}}$	D) $\frac{\sqrt{3}}{2}$
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Q75: $2 \times \sin(40^\circ) \times \cos(40^\circ) =$

A) $\sin(40^\circ)$	B) $\cos(40^\circ)$	C) $\sin(80^\circ)$	D) $\cos(80^\circ)$
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Q76: $\frac{\sin^2(25^\circ) + \cos^2(25^\circ)}{\csc(70^\circ)} =$

A) $\sin(70^\circ)$	B) $\cos(70^\circ)$	C) $\csc(70^\circ)$	D) $\sec(70^\circ)$
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Q77: If $f(x) = \frac{x-1}{x^3+x^2-6x}$, then the domain of $f(x)$ is given by

A) $\mathbb{R} \setminus \{-3, -2, 0\}$	B) $\mathbb{R} \setminus \{-3, 0, 2\}$	C) $\mathbb{R} \setminus \{-2, 0, 3\}$	D) $\mathbb{R} \setminus \{0, 2, 3\}$
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Q78: Domain of the following function $f(x) = \frac{\sqrt[4]{x}}{x^2 - 9}$ is

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|------------------------------------|----------------------------------|--|-------------------------------------|
| A) $(-\infty, 0] \setminus \{-3\}$ | B) $[0, \infty) \setminus \{3\}$ | C) $\mathbb{R} \setminus \{-3, 0, 3\}$ | D) $\mathbb{R} \setminus \{-3, 3\}$ |
|------------------------------------|----------------------------------|--|-------------------------------------|

Q79: Domain of the following function $f(x) = \sqrt[3]{x^2 - 16}$ is

- | | | | |
|-------------------------------------|-------------------------------------|----------------------------------|-----------------|
| A) $(-\infty, -4] \cup [4, \infty)$ | B) $\mathbb{R} \setminus \{-4, 4\}$ | C) $\mathbb{R} \setminus \{16\}$ | D) \mathbb{R} |
|-------------------------------------|-------------------------------------|----------------------------------|-----------------|

Q80: Equation of the line that passes through the point $(4, -1)$ and has no slope is

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|------------|-------------|------------|-------------|
| A) $x = 4$ | B) $x = -1$ | C) $y = 4$ | D) $y = -1$ |
|------------|-------------|------------|-------------|

Q81: Equation of the line that passes through the point $(4, -1)$ with slope zero is

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|------------|-------------|------------|-------------|
| A) $x = 4$ | B) $x = -1$ | C) $y = 4$ | D) $y = -1$ |
|------------|-------------|------------|-------------|

Best Wishes