Q1. The DOMAIN of the function $f(x)=\dfrac{\sqrt{4-9x^2}}{4}$ is given by:

Q2. If $f(2)=1$, find a point on $g(x)=2f(3x)-1$

Q3. The RADIUS of the circle $4x^2+4y^2-16x+8y+19=0$ is equal to:

Q4. The equation of the circle in quadrant 3, and is tangent to both axis and has radius = 4 is:

Q5. Draw the graph of the following function and find the domain and range.

$$f(x)=\begin{cases}4 & ;\ x<0\\ \left[\left|\dfrac{1}{3}x\right|\right] & ;\ 0\le x\le 6\end{cases}$$

Q6. If the slope of the line passing through the point (2,-1) and the vertex of $y=-2(x+k)^2-5$

Is $\dfrac{3}{k}$. Find the value of k

Q7. If $f(x)=[\![x]\!]$ is the greatest integer function. Find the value of $\dfrac{f(x-a)-f(a-x)}{f\left(\dfrac{x}{a}\right)}$ when

$x=1.5$ *and* $a=0.6$

Q8. Find the domain of $\dfrac{1}{\sqrt{|x^2-1|}}$

Q9. If the x-intercept of the equation $|y|=2x-4$ and the vertex of the parabola $y=-2x^2+4x+1$ are the end points of the diameter of a circle. Write the equation of the circle in standard form.

Q10. If the line $\dfrac{1}{2}kx+3y-7=0$ is perpendicular to the line passing through $(1,-0.5)$ and $(-2,-5)$, then the value of k is equal to:

Q11. If the point $\left(\frac{-1}{4}, t\right)$ is the vertex of the parabola $y = x^2 + mx + 2$ for some real number m, then the value of t is equal to:

Q12. Two positive integers p *and* q satisfy the equation $2p + q = 40$. If their product is a maximum, then the value of $p + q$ is equal to:

Q13. The graph of $y = 2x^2 + 3x - 1$ is translated 1 unit left and 3 units upward, then the equation of the new graph is:

Q14. The graph of the equation $y = x^5 - 4x^3$ is symmetric with respect to:

Q15. The slope of the line that passes through the center of the circle $(x+1)^2 + (y-3)^2 = 10$ and the vertex of the equation $y = x^2 + 4x$ is equal to:

Q16. The $x-$intercepts of the line passing through the points (-2,1) and (3,-5) is equal to:

Q17. If $f(x)$ is an odd function such that $f(-2) = 3$. Find the coordinates of two points on the graph of the function $g(x) = 2f(3x)$