

Answers

9. If $f(x) = \sqrt{x}$ and $g(x) = x^2 - 4$, find with domain:
a) $(f \circ g)(x)$ and b) $(g \circ f)(x)$

a) $x^2 - 4, (-\infty, 2] \cup [2, \infty)$
b) $x - 4, [0, \infty)$

10. Solve for x : a) $\log_2(x + 2) = 4$ b) $2^{x^2 - x} = 64^{x + 3}$
 $x = 14$ $x = -2, 9$

11. Find all x in the interval $[0, 2\pi]$ so that $\sin x = 1 - 2 \sin^2 x$. $x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$

12. If θ is in quadrant II and $\cos \theta = -\frac{2}{3}$, find $\sin 2\theta$ and $\cos 2\theta$.
 $-\frac{4\sqrt{5}}{9}$ $-\frac{1}{9}$

13. The length of a rectangle is 2 meters less than three times its width. If the area of the rectangle is 33 square meters, find its perimeter.

$L = 9, W = \frac{11}{3}, \text{perimeter} = \frac{76}{3} \text{ m}$