

NO CALCULATORS

CLOSED BOOK

CLOSED NOTES

TIME LIMIT: 15 MINUTES

1. Find the exact x -intercepts of $f(x) = 16 - x^4$.
2. Given $f(x) = \sin^2(x) + \cos(2x)$, find the exact value of $f(2\pi/3)$.
3. Write the Pythagorean Identity which involves a Tangent term.
Must use the proper notation.
4. Find all solutions for θ given that $2\sec^2\theta - 4 = 0$ with $-180^\circ \leq \theta \leq 90^\circ$.
5. Find the domain of the function $y = \frac{\sqrt{3-x}}{x-2}$. Express answer in interval notation.
6. Solve for x : $4x^2(x+1)^3 + 2x(x+1)^4 = 0$
7. The area of a circle is 8π square inches. Find its exact circumference.
8. Find all the y -intercepts of the graph of $x^2y - (3 - 2y)^2 + 4 = x$.
9. Find all values of θ given that $\sin^2\theta = \cos\theta - 1$ with $0 \leq \theta \leq 2\pi$.
10. There are three Double Angle Formulas for the Cosine.
Write the one which involves only Sine terms on the right-hand side.
Make sure your formula has both a left-hand side and a right-hand side.

Answers:

1. $(-2, 0); (2, 0)$ [alternately, write $x = -2, 2$]

2. $1/4$

3. $\text{Sec}^2\theta = 1 + \text{Tan}^2\theta$

4. $-135^\circ, -45^\circ, 45^\circ$

5. $(-\infty, 2) \cup (2, 3]$

6. $0, -1, -1/3$

7. $4\sqrt{2} \pi$

8. $(0, 1/2); (0, 5/2)$

9. $0, 2\pi$

10. $\text{Cos}2\theta = 1 - 2\text{Sin}^2\theta$