SHOW YOUR WORK

1. Solve the quadratics: \(2y(y - \frac{3}{2}) = 9\)

2. Solve the radical equation and check the results
   \[\sqrt{x + 1} + \sqrt{x} = 2\]

3. Solve the fractional equation and state the restrictions
   \[\frac{1}{x+6} + \frac{3}{x-1} = \frac{5}{x^2+5x-6}\]

4. Solve \(x\) and \(y\)
   \[x^2 - 2y = 0\]
   \[y = 3x - 4\]

5. Conversion between degree and Radian:
   a) \(\frac{4\pi}{7}\) rad = \(\text{degree}\)
   b) \(208^\circ = \text{rad}\)

Solve Trigonometric Equations \((0^\circ \leq \theta < 360^\circ)\)

6. \(3\tan^2\theta - 1 = 0\)

7. \(5\sin\theta \cos\theta - 3\cos\theta = 0\)

8. \(3\sin^2\theta + 2\sin\theta - 4 = 0\)
Prove Trigonometric Identities

9. \( \tan \theta \csc \theta = \sec \theta \)

10. \( \frac{\sin x}{\tan x} - \frac{\cos x}{\cot x} = \cos x - \sin x \)

11. \( \frac{1 + \cos x}{\sin x + \tan x} = \cot x \)

12. \( \sin x \tan x + \cos x = \sec x \)