

Quiz One

Show all work. No credit for final answer only. Attach papers if needed. You have 20 mins.

1. (3 points) Find the domain of the function $f(x) = \frac{\sqrt{3x+6}}{x}$ in the interval notation.

2. (3 points) Find the equation of the line containing points $(3, 2)$ and $(-1, -2)$ in both points-slope and slope-intercept forms.

3. (3 points) Graph the function $f(x) = \frac{x}{2} - 1$, and identify the intercepts.

4. (3 points) Graph the function $f(x) = |4x - 12|$ and rewrite the function in piecewise form.

5. (4 points) $f(x) = x^2 - x - 1$,

(a) Find the roots of if there exist or write no real roots.

(b) Find the biggest interval in which the function is increasing.

6. (4 points) The price of some products is $p(x) = 100 - x$, and the cost is $C(x) = 20x + 4$.

(a) Find the revenue function $R(x)$ and the profit function $P(x)$.

(b) Find the break-even points.