

AP Precalculus - M3Y & M3Z

Algebra Homework

1. Solve the following equations. Show your work:

(i) $9x - 2 = 16$

(vi) $4x = 5 - x^2$

(ii) $7x + 5 = \frac{x}{3} - 3$

(vii) $x^2 - 28x + 93 = -x^2 - 5$

(iii) $\frac{5x}{9} + 7 = -3 - \frac{8x}{7}$

(viii) $2x^3 - 3x^2 + 6x = 4x$

(iv) $\frac{1}{x} - 2 = \frac{7}{3}$

(ix) $3x^2 - 9x + 5 = -2x + 4x^2 = 0$

(v) $x^2 - 8x + 15 = 0$

(x) $\frac{2}{x} + 8x = x + 5$

2. Find the domains of the following functions and write them as intervals or unions of intervals. Show your work:

(i) $f(x) = \frac{3}{x-9}$

(v) $D(x) = \frac{2x^3 + 4x^2 - 6x + 2}{\sqrt{7x+2}}$

(ii) $g(x) = \sqrt{x-5}$

(vi) $p(x) = \frac{\sqrt{-12x+7}}{-x^2+13x-42}$

(iii) $q(x) = \sqrt{5(3-x) - 2 - 3x}$

(iv) $h(x) = \frac{6x-17}{3x^2+9x+6}$

(vii) $t(x) = \frac{2x-5}{x^4-7x^2+10}$