

Name: _____

1.6-1.8 Review

1. Solve each equation for x.

a) $\frac{3x-10}{x-5} = \frac{11}{x^2-25} + 7$

b) $\frac{18}{x^2-9x} + \frac{10}{x} = \frac{2}{x-9}$

c) $|x^2 - 3x| = 3x - 5$

d) $\sqrt{x+10} - \sqrt{x-6} = 2$

e) $\sqrt{x+9} + x = 3x - 10$

2. Solve each quadratic for x by factoring and/or a substitution.

a) $1 = 64x^6$

b) $(x^2 - 13x + 6)^{3/2} = 216$

c) $x^6 - 26x^3 - 27 = 0$

d) $6x^{1/2} - 11x^{1/4} - 35 = 0$

3C. Solve each quadratic using the quadratic formula and/or a substitution.

a) $8(x-3)^2 + 8(x-3) = 14$

b) $3x - 5x^2 = 1$

3. Find all real x values that satisfies each inequality. Put your answers in interval notation and as a graph.

a) $\left|4 - \frac{2}{3}x\right| \leq 16$

b) $|3 - 4x| > 7 - x$

c) $(x - 4)^2 - 16 > 20$

d) $4x^5 + 17x^3 + 4x < 0$

e) $-3x^2 + x - 4 > 0$

f) $2x^2 - 20x \leq -50$

g) $x^2 + 6x + 4 \geq 0$

h) $x^3 + x^2 - x < 1$

i) $\frac{4}{x-3} \leq \frac{3}{x+5}$

j) $\frac{x(x+2)^3(x-5)^4}{(x-3)^2x} \geq 0$

4. Find the domain of each function.

a) $f(x) = \sqrt{\frac{2x-10}{3x+12}}$

b) $g(x) = \sqrt{3x^3 - 24x}$