

Accelerated Math 3
Solving Equations and Inequalities Review

Solve the following equations.

a. $1200 = 300 + 2(x - 500)$

b. $\frac{3x}{2} + \frac{1}{4}(x - 2) = 10$

c. $\frac{2x}{3} = 10 - \frac{24}{x}$

d. $\frac{x-3}{25} = \frac{x-5}{12}$

e. $\frac{6}{x} + \frac{8}{x+5} = 3$

f. $\frac{3}{x+2} - \frac{4}{x-2} = 5$

g. $3(x+3) = 5(1-x) - 1$

h. $(x+1)^2 + 2(x-2) = (x+1)(x-2)$

i. $2x^3 - x^2 - 18x + 9 = 0$

j. $x^4 = 2x^2 - 1$

k. $6x^2 + 3x = 0$

l. $9x^2 = 25$

m. $(2x-1)^2 = 18$

n. $(x+5)^2 = (x+4)^2$

o. $2 + 2x - x^2 = 0$

p. $9x^2 - 6x - 35 = 0$

q. $|2x-1| = 5$

r. $|x| = x^2 + x - 3$

s. $\sqrt{x-10} - 4 = 0$

t. $\sqrt{x+1} - 3x = 1$

u. $\sqrt{x+5} = \sqrt{x-5}$

v. $\sqrt{x} - \sqrt{x-5} = 1$

w. $\sqrt{2x+3} + \sqrt{x-2} = 2$

x. $(x-1)^{\frac{2}{3}} - 25 = 0$

Solve the following inequalities.

a. $-2 < 3x + 1 < 10$

b. $-8 \leq 1 - 3(x-2) < 2$

c. $-4 < \frac{2x-3}{3} < 4$

d. $|x-7| > 6$

e. $|1-2x| < 5$

f. $(x+6)^2 \leq 8$

g. $x^2 - 6x + 9 < 16$

h. $x^3 - 4x \geq 0$

i. $x^4(x-3) \leq 0$