

Solve each of the following equations & inequalities: (graph the solutions for the inequalities on a number line)

3) $\frac{7}{3}y + \frac{5}{6} = 6y + \frac{11}{2}$

$y = -\frac{14}{11}$

$\frac{7}{3}y + \frac{5}{6} = 6y + \frac{11}{2}$

$\frac{5}{6} - \frac{11}{2} = 6y - \frac{7}{3}y$

$\frac{5}{6} - \frac{33}{6} = \frac{18y}{3} - \frac{7}{3}y$

$\frac{-28}{6} = y \frac{(18-7)}{3}$

$-14 = y(11)$

7) $.3(x+1) > 2.13(x+1.1)$

$x < -1.11639$

$.3(x+1) > 2.13(x+1.1)$

$.3x + .3 > 2.13x + 2.343$

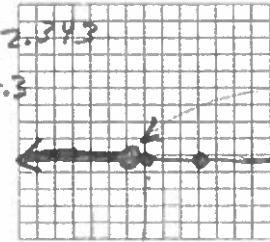
$.3x - 2.13x > 2.343 - .3$

$-1.83x > 2.043$

$-x > \frac{2.043}{1.83}$

$-x > 1.11639$

$x < -1.11639$



4) $1.2(x+5) = 1.6(2x+5)$

$x = -1$

$1.2(x+5) = 1.6(2x+5)$

$1.2x + 6 = 3.2x + 8$

$6 - 8 = 3.2x - 1.2x$

$-2 = x(3.2 - 1.2)$

$-2 = x(2)$

$-1 = x$

8) $\frac{u}{5} + \frac{u}{10} - \frac{u}{6} \leq 1$

$u \leq \frac{15}{2}$

$\frac{u}{5} + \frac{u}{10} - \frac{u}{6} \leq 1$

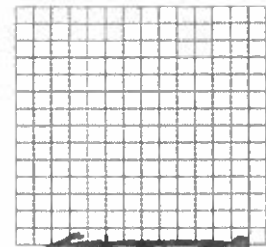
$u(\frac{1}{5} + \frac{1}{10} - \frac{1}{6}) \leq 1$

$u(\frac{6}{30} + \frac{3}{30} - \frac{5}{30}) \leq 1$

$u(\frac{6+3-5}{30}) \leq 1$

$u(\frac{4}{30}) \leq 1$

$\frac{2u}{15} \leq 1$



$2u \leq 15$

$u \leq \frac{15}{2}$

Solve for the indicated variable and state any restrictions:

10) $\frac{x+3}{t} = t^2, x$

$x = t^3 - 3$

$x + 3 = t \cdot t^2$

$x + 3 = t^3$

$x = t^3 - 3$

15) $\frac{4}{9}(x+3) = g, x$

$x = \frac{9}{4}g - 3$

$\frac{4}{9}(x+3) = g$

$4(x+3) = 9 \cdot g$

$(x+3) = \frac{9}{4} \cdot g$

$x = \frac{9}{4}g - 3$

11) $V = \frac{\pi}{3}r^2h, r$

$r = \sqrt{\frac{3V}{\pi h}}$

$V = \frac{\pi}{3}r^2h$

$\frac{V}{h} = \frac{\pi}{3}r^2$

$\frac{3V}{h} = \pi r^2$

$\frac{3V}{\pi h} = r^2$

$\sqrt{\frac{3V}{\pi h}} = r$

12) $S = L(1-r), r$

$r = 1 - \frac{S}{L}$

$S = L(1-r)$

$\frac{S}{L} = 1-r$

$\frac{S}{L} - 1 = -r$

$-\frac{S}{L} + 1 = r$

$r = 1 - \frac{S}{L}$

13) $Q = \frac{c+d}{2}, d$

$d = 2Q - c$

$Q = \frac{c+d}{2}$

$2Q = c+d$

$2Q - c = d$

16) $A = \frac{1}{2}ah - \frac{1}{2}bh, h$

$h = \frac{2A}{a-b}$

$A = \frac{1}{2}ah - \frac{1}{2}bh$

$A = h(\frac{1}{2}a - \frac{1}{2}b)$

$\frac{A}{\frac{1}{2}a - \frac{1}{2}b} = h$

$\frac{2A}{a-b} = h$

17) $a(x+c) = b(x-c), x$

$x = \frac{c(b+a)}{b-a}$

$a(x+c) = b(x-c)$

$ax + ac = bx - bc$

$ax - bx = -bc - ac$

$x(a-b) = -bc - ac$

$x = \frac{-bc - ac}{a-b}$

$x = \frac{bc + ac}{b-a}$

18) $x - 2y = 5, y$

$y = \frac{x-5}{2}$

$x - 2y = 5$

$-2y = 5 - x$

$2y = x - 5$

$y = \frac{x-5}{2}$