Math 9 – Unit 3: Solving Equations

Name: Mr. Hagen

Lesson #3: Solving with Brackets

Date: October 12, 2017

The next layer to solving equations is to have brackets in the equations. With brackets, you first need to expand (using the Distributive Property), simplify, then use the skills from the last two lessons to solve. Here we go!!

a) $2(x-3)=2$

$2x-6=2$ (+6 +6)

$\frac{2x}{2}=\frac{8}{2}$

$x=4$

b) $3(y+2)=-9$

$3y+6=-9$ (−6 −6)

$\frac{3y}{3}=\frac{-15}{3}$

$y=-5$

c) $2(3p+4)=14$

$6p+8=14$ (−8 −8)

$\frac{6p}{6}=\frac{6}{6}$

$p=1$

d) $-24=4(h+3)$

$-24=4h+12$ (−12 −12)

$\frac{-36}{4}=\frac{4h}{4}$

$-9=h$

e) $3(m+1)+10=8-2m$

$3m+3+10=8-2m$

$3m+13=8-2m$ (+2m, −13, −13, +2m)

$\frac{5m}{5}=\frac{-5}{5}$

$m=-1$

f) $8-3w=4(w-3)+6$

$8-3w=4w-12+6$

$8-3w=4w-6$ (−8, −4w, −4w, −8)

$\frac{-7w}{-7}=\frac{-14}{-7}$

$w=2$

g) $5(2x-3)=2(x-2)+5$

$10x-15=2x-4+5$

$-2x \quad -2x$

$10x-15=2x+1$

$+15 \quad +15$

$\frac{8x}{8}=\frac{16}{8}$

$x=2$

h) $4(d+7)=-44+2(d+6)$

$4d+28=-44+2d+12$

$-2d \quad -28 \quad -2d \quad -28$

$4d+28=2d-32$

$\frac{2d}{2}=\frac{-60}{2}$

$d=-30$

i) $4(n-2)-(n+3)=n-1$

$4n-8-n-3=n-1$

$-n \quad +11 \quad -n \quad +11$

$3n-11=n-1$

$\frac{2n}{2}=\frac{10}{2}$

$n=5$

j) $4(k-7)-2(k+3)=-15k$

$4k-28-2k-6=-15k$

$-2k \quad -2k$

$2k-34=-15k$

$\frac{-34}{-17}=\frac{-17k}{-17}$

$2=k$

k) $3(2x+1)-(x-2)=2(x+4)$

$6x+3-x+2=2x+8$

$-2x \quad -5 \quad -2x \quad -5$

$5x+5=2x+8$

$\frac{3x}{3}=\frac{3}{3}$

$x=1$