ALGEBRA 1
2-4 PRACTICE WORKSHEET

Name KEY
Date _____

Solve each equation. Show proper formatting!

1. $4y + 15 = 6y - 11$

$-4y \quad -4y$

$15 = 2y - 11$

$+11 \quad +11$

$\frac{26}{2} = \frac{2y}{2}$

$13 = y$

2. $5p + 6 = -4p - 8$

$+4p \quad +4p$

$9p + 6 = -8$

$-6 \quad -6$

$\frac{9p}{9} = \frac{-14}{9}$

$p = -\frac{14}{9}$

3. $25h + 40 = -15h - 80$

$+15h \quad +15h$

$40h + 40 = -80$

$-40 \quad -40$

$\frac{40h}{40} = \frac{-120}{40}$

$h = -3$

4. $-2m + 13 = 2m - 3$

$+2m \quad +2m$

$13 = 4m - 3$

$+3 \quad +3$

$\frac{16}{4} = \frac{4m}{4}$

$4 = m$

5. $4(h + 2) = 3(h - 2)$

$4h + 8 = 3h - 6$

$-3h \quad -3h$

$h + 8 = -6$

$-8 \quad -8$

$h = -14$

6. $-(3b - 15) = 6(2b + 5)$

$-3b + 15 = 12b + 30$

$+3b \quad +3b$

$15 = 15b + 30$

$-30 \quad -30$

$\frac{-15}{15} = \frac{15b}{15}$

$-1 = b$

7. $5x + 7 + 3x = -8 + 3x$

$8x + 7 = -8 + 3x$

$-3x \quad -3x$

$5x + 7 = -8$

$-7 \quad -7$

$\frac{5x}{5} = \frac{-15}{5}$

$x = -3$

8. $18 - 6a = 4a - 4(a + 3)$

$18 - 6a = 4a - 4a - 12$ [watch the signs]

$18 - 6a = -12$

$-18 \quad -18$

$\frac{-6a}{-6} = \frac{-30}{-6}$

$a = 5$

Solve each equation showing proper formatting.
Write "identity" or "no solution," if applicable.

9. $6(4z+2) = 3(8z+4)$

$24z + 12 = 24z + 12$

Identity

10. $-8t - 3t + 2 = -5t - 6t$

$-11t + 2 = -11t$

$+11t \quad +11t$

$2 = 0$

No Solution

11. $\left(\frac{3}{4}\right) + \left(\frac{1}{4}m\right) = \left(\frac{3}{4}m\right) - \left(\frac{1}{4}\right)$ (×4)

$3 + m = 3m - 1$

$-m \quad -m$

$3 = 2m - 1$

$+1 \quad +1$

$\frac{4}{2} = \frac{2m}{2}$

$2 = m$

12. $0.2f + 0.6(f + 20) = -8 + 0.4f$

$0.2f + 0.6f + 1.2 = -8 + 0.4f$

$0.8f + 1.2 = -8 + 0.4f$

$-0.4f \quad -0.4f$

$0.4f + 1.2 = 8$

$-1.2 \quad -1.2$

$\frac{0.4f}{0.4} = \frac{-0.4}{0.4}$

$f = 1$

13. Six times the sum of a number and 3 is 12 less than 12 times the number.

a. Define a variable. let x = the number

b. Write and solve an equation.

$6(x+3) = 12x - 12$

$6x + 18 = 12x - 12$

$-6x \quad -6x$

$18 = 6x - 12$

$+12 \quad +12$

$30 = 6x$

$5 = x$

c. Answer in a sentence. The number is 5.

14. Jeremy is looking at two different lawncare companies to weed and mulch his garden. Greenscape Lawncare charges $100 for the mulch, plus $12 per hour for the labor. DJ's Lawncare charges $23 per hour, which includes the price for the mulch. What is maximum number of hours for which DJ's Lawncare is the better deal?

a. Define a variable. let h = # of hours of labor

b. Write and solve an equation.

Greenscape cost: $100 + 12h$ = DJs cost: $23h$

$-12h \quad -12h$

$\frac{100}{11} = \frac{11h}{11}$

$9.09 \text{ hrs} = h$

c. Answer in a sentence. DJs is a better deal if you use them 9 hours or less.