Algebra   Name:_____

Equations with Variables on Both Sides   Period: _____   #:_____

Solve each equation. Check your answers. If appropriate, write *identity* or *no solution*.

1. $7 - 2n = n - 14$ 2. $2(4 - 2r) = -2(r + 5)$ 3. $3d + 8 = 2d - 7$

4. $6t = 3(t + 4) - t$ 5. $8z - 7 = 3z - 7 + 5z$ 6. $7x - 8 = 3x + 12$

7. $3(n - 1) = 5n + 3 - 2n$ 8. $2(6 - 4d) = 25 - 9d$ 9. $4s - 12 = -5s + 51$

10. $8(2f - 3) = 4(4f - 8)$ 11. $6k - 25 = 7 - 2k$ 12. $3v - 9 = 7 + 2v - v$

13. $4(b - 1) = -4 + 4b$ 14. $\dfrac{1}{4}x + \dfrac{1}{2} = \dfrac{1}{4}x - \dfrac{1}{2}$ 15. $6 - 4d = 16 - 9d$

Write an equation for each situation. Then solve and check your answer.

16. Hans needs to rent a moving truck. Suppose Company A charges a rate of $40 per day and Company B charges a $60 fee plus $20 a day. For what number of days is the cost the same?

17. Suppose a video store charges nonmembers $4 to rent each video. A store membership costs $21 and members pay only $2.50 to rent each video. For what number of videos is the cost the same?

18. Suppose your club is selling candles to raise money. It costs $100 to rent a booth from which to sell the candles. If the candles cost your club $1 each and are sold for $5, how many candles must be sold to equal your expenses?