3.5 CA Solve Equations with Variables on Both Sides

Name: _____

Solve each equation. Some equation will have a single answer, others will have no solution, and still others will have infinitely many solutions.		
1. $10x-2=-4x+40$	2. $-14-x=-9-5x+4x$	3. $2x-9+6x=9-15x$
4. $-3(x+2)+x=-2x+5$	5. $8t-10-2t=-6t+10+9t$	6. $3-4x=5(x-3)$
7. $-11-5a=6(5a+4)$	8. $8(4k-4)=-5k-32$	9. $6(x+4)-2=6x+20$
10. $9x+3x-10=3(3x+x)-10$	11. $2(x-5)-3x+13=3(1-x)$	12. $5(2x+6)=-4(-5-2x)+3x$

Write & solve the equation.	
13. Seven times a number is equal to 12 more than 3 times the number. Find the number.	14. When you multiply a number by x and 5, the result is the same as the product of the number x and 7.
15. The sum of 3x and 14 equals the difference of 20 and 2x.	16. Ten more than 6 times a number is 4 less than 4 times the number.

17. COLLEGE Duke is a part-time student at Horizon Community College. He currently has 22 credits, and he plans to take 6 credits per semester until he is finished. Duke's friend Kila is also a student at the college. She has 4 credits and plans to take 12 credits per semester. After how many semesters will Duke and Kila have the same number of credits?

18. PLUMBING A1 Plumbing Service charges $35 per hour plus a $25 travel charge for a service call. Good Guys Plumbing Repair charges $40 per hour for a service call with no travel charge. How long must a service call be for the two companies to charge the same amount?

19.

Henry travels at 25 miles/hour and Greg travels at 21 miles/hour. They traveled in the same direction but Greg had a 1 hour head start.

How long will it take for Henry to catch up to Greg?

20.

Dale travels at 59 kilometers/hour and Henry travels at 44 kilometers/hour. They traveled in the same direction but Henry had a 1.5 hour head start.

How long will it take for Dale to catch up to Henry?