1. $-1(4-7)^2+6 = -1(-3)^2+6 = -1(9)+6 = -9+6 = -3$

2. $2-|(-3)(4)+(-1)^2| = 2-|-12+1| = 2-|-11| = 2-11 = -9$

3. $2(x+y)-3(y-x) = 2x+2y-3y+3x = 5x-y$

4. $\frac{|a|+|b|}{|a+b|} = \frac{|-6|+|2|}{|-6+2|} = \frac{6+2}{|-4|} = \frac{8}{4} = 2$

5. Let x = time, in hours, driving 55 mi/h; $5-x$ = time, in hours, driving 30 mi/h; $30(5-x)+55x = 250; 150-30x+55x = 250; 25x = 100; x = 4$; he spent 4 h at 55 mi/h
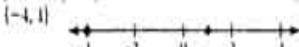
6. $3(2x-1) = 4x+7; 6x-3 = 4x+7; 2x = 10; x = 5; \{5\}$
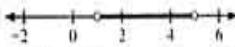
7. $13-7y \ge 34; -7y \ge 21; y \le -3; \{y : y \le -3\}$

8. $5 < 3w+8 < 14; -3 < 3w < 6; -1 < w < 2; \{w : -1 < w < 2\}$

9. $|2m+3| = 5; 2m+3 = 5$ or $2m+3 = -5; 2m = 2$ or $2m = -8; m = 1$ or $m = -4; \{-4, 1\}$

10. $\left|\frac{c-3}{2}\right| < 1; |c-3| < 2; -2 < c-3 < 2; 1 < c < 5; \{c : 1 < c < 5\}$

11. $6-|n| \ge 4; 2 \ge |n|; -2 \le n \le 2; \{n : -2 \le n \le 2\}$

12. (1) $a+(b-a) = a+(b+(-a))$ (Def. of subtr.);
    (2) $a+(b-a) = a+((-a)+b)$ (Comm. prop. of add.);
    (3) $a+(b-a) = (a+(-a))+b$ (Assoc. prop. of add.);
    (4) $a+(b-a) = 0+b$ (Prop. of opposites);
    (5) $a+(b-a) = b$ (Ident. prop. of add.)

13. $3x-2y = 1; y = \frac{3x-1}{2}; y = \frac{3(-1)-1}{2} = -2, y = \frac{3(0)-1}{2} = -\frac{1}{2}; y = \frac{3(1)-1}{2} = 1;$
    $\left\{(-1, -2), \left(0, -\frac{1}{2}\right), (1, 1)\right\}$

14. $m = -\frac{A}{B} = -\frac{8}{-6} = \frac{4}{3}$ 15. $3y-9 = 0; 3y = 9; y = 3; m = 0$

16. $y-(-3) = -\frac{1}{2}(x-4); 2y+6 = -x+4; x+2y = -2$

ALGEBRA II FINAL EXAM REVIEW SEMESTER I
(Chapters 1 - 7)

** Calculators will NOT be used on the final exam **

- answers to :
  cum. review (ch. 1-3) p. 165
  cum. review (ch. 4-7) pp. 348-349

17. $m = \frac{\frac{1}{2}-4}{-3-(-2)} = \frac{-\frac{7}{2}}{-1} = \frac{7}{2}; y-4 = \frac{7}{2}(x-(-8)); 2y-8 = 7x+14; 7x-2y = -22$

18. $b = 4; y = mx+4; 0 = m(6)+4; m = -\frac{2}{3}; y = -\frac{2}{3}x+4; 3y = -2x+12;$
    $2x+3y = 12$

19. $m = -\frac{A}{B} = -\frac{5}{-4} = \frac{5}{4}; y-(-2) = \frac{5}{4}(x-(-1)); 4y+8 = 5x+5; 5x-4y = 3$

20. The slope of the line $2x+y = 5$ is $-2; m = \frac{1}{2}; y-2 = \frac{1}{2}(x-3); 2y-4 = x-3;$
    $x-2y = -1$

21. $3x-4y = 10, 6x-8y = 20$
    $2x+3y = 1, 6x+9y = 3, -17y = 17; y = -1; 3x-4(-1) = 10; 3x = 6; x = 2;$
    $(2, -1)$

22. $y = \frac{1}{2}x-1$
    $x-2y = 4$; $x-2\left(\frac{1}{2}x-1\right) = 4; x-x+2 = 4; 2 = 4$; no solution

23. $x = 7y-4$
    $y = 7x+4$; $y = 7(7y-4)+4; y = 49y-28+4; 48y = 24; y = \frac{1}{2}; x = 7\left(\frac{1}{2}\right)-4;$
    $x = -\frac{1}{2}; \left(-\frac{1}{2}, \frac{1}{2}\right)$

24.

Jan. 20, 2000