

(ch. 1-3)

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. $13 - 7y \geq 34$; $-7y \geq 21$; $y \leq -3$; $\{y : y \leq -3\}$



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. $6 - |n| \geq 4$; $2 \geq |n|$; $-2 \leq n \leq 2$; $\{n : -2 \leq n \leq 2\}$



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

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

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

