ALGEBRA 2-H   EXTRA FUN PROBLEMS   CHAPTER 1

Do these problems on the same paper as your daily textbook assignments.

Textbook Section(s)	NO CALCULATORS! SHOW WORK! EXTRA PROBLEMS (use exact values—no rounding decimals—in answers)
1-1 & 1-2	Simplify: 1. $(-9+3-4)-\left[(8-(-4)-6)\right]$ 2. $\left\lvert-18-17\right\rvert-\left\lvert-73+4\right\rvert$ 3. $30\div6\cdot3-8\cdot4$ 4. $1\cdot5^3+3\cdot5^2-9\cdot5-8$ 5. $\dfrac{6^2-2^2\cdot3}{2^3(9-6)}$ 6. $\dfrac{8[-7+5(1-6)]}{(-4)^3}$ 7. $\dfrac{\left[\frac{-3}{4}-\left(-\frac{1}{2}\right)\right](-8)}{\frac{8}{9}\div(-4)}$ 8. $(-8)(-4)-7\div\left(-\frac{1}{4}\right)-\left[(-6)^2\div9\right]$ 9. Evaluate, when $x=4$, $y=5$, and $z=3$: $\dfrac{2x+3(y+z)}{x\left(y^2-z^2\right)}$ 10. Evaluate, when $c=7$ and $d=2$: $\dfrac{\left[c+(c-d)^2\right]^2}{c^2-3cd+(d+1)^2}$ Simplify. Arrange answers in descending order, when possible. 11. $\frac{5}{2}\left(4w^2-2w+6\right)+3(7-4w)$ 12. $\left(9x^2y-7xy+8xy^2\right)-\left(13xy^2-x^2y^2+4x^2y+5y^2\right)$ 13. $11n-3\left[2(-4n+6)+5n\right]+6$ 14. What polynomial must be subtracted from $5x^3-7x^2+4$ to obtain $-x^3-7x^2+5x-6$?
1-3 , 1-6, and Review	Solve each inequality. Graph each solution set that is not empty. 15. $4-(5-2x)<-2(x+2)$ 16. $2(9x-10)-\frac{6}{5}x\geq8(3x-1)$ 17. $4\left[5x-(3x-7)\right]<2(4x-5)$ 18. $\frac{11}{3}-\frac{2}{x}\geq5$ 19. $-1-5x<x+11$ and $\frac{x}{5}-\frac{1}{2}\leq\frac{x}{4}$ 20. $-6<2(x-3)<2$ or $4<3-x<9$ Tell whether the statement is true or false for all real numbers. If false, give a counterexample. 21. If $a>b$, then $a^2>b^2$. 22. If $a\neq b$, then $a^2+b^2>2ab$

	23. Find values for $a, b, c,$ and d so that the given equation is an identity. $\left(a+8y^3-3by^2\right)-\left(9y^2+6+5cy^3-dy\right)=8y^3+y-4$
1-4 and Review	24. Solve for z: $\quad z+a=3(z+a)$ $\qquad$ 25. Solve for r: $\quad A=P(1+rt)$ 26. Solve for d: $\quad S=\dfrac{n}{2}\left[2a+(n-1)d\right]$ 27. Evaluate, when $x=3$ and $y=8$: $\quad \dfrac{\left(2x^2+y^2\right)(13x-3y)^2}{5x^2+4xy+y^2}$ 28. Insert grouping symbols so that the equation is true. $\quad 5-2^2+4\cdot7-3=25$ 29. Tell whether the statement is true or false for all real numbers. If false, give a counterexample. If $a>b$ and $c>d$, then $a-c>b-d$. Solve and graph each solution that is not empty. 30. $8<5-3x\le14$ $\qquad$ 31. $-\dfrac{3}{4}x\ge x-1$ or $-\dfrac{3}{4}x<x+1$ 32. $\left[3x-1<8\text{ or }2(x-1)<-6\right]$ and $-1\le2x\le3$
1-7 and Review	Solve. If the solution is non-empty, graph the solution and state the solution algebraically. 33. $6-\left|4-x\right|\ge5$ $\qquad$ 34. $11+\dfrac{1}{2}\left|0.4x-1\right|>13$ $\qquad$ 35. $\dfrac{1}{2}\left|x\right|+5\ge2\left|x\right|-13$ 36. $3\le\left|y+2\right|<4$ 37. Solve for x: $\quad x(a+b)=a-b$ 38. Solve for v: $\quad S=-\dfrac{1}{2}gt^2+vt$ 39. Tell whether the statement is true or false for all real numbers. If false, give a counterexample. $\quad \left|a\right|=a$