

ALGEBRA 2 Chapter 1

_____ Name

Equations and Inequations

| Date | Section Topic | Page and # | Worksheet / Quiz |
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| 1.____ | 1.1 Properties of Real Numbers | P6 #10-16,2141*,46*,51*,52*,54* | |
| 2.____ | 1.2 Simplify Algebraic Expressions | P13 #10,12,14,21,22,23,24-48 (Div 4) | Practice 1.1-1.2 |
| | | | Quiz 1 |
| 3.____ | 1.3 Solve Linear Equations | P21 #8-72 (Div 4),64,69,70*,73*75* | |
| 4.____ | 1.4 Rewrite Formula and Equations | P30 #7,9,11,18,19,21,28,30* | Practice 1.3-1.4 |
| 5.____ | 1.5 Problem Solving Strategies | P37 #11-15,18,21*,22,23,29,32* | Practice 1.5 |
| | | P40 #1-12 | Quiz 2 |
| 6.____ | 1.6 Solving Linear Inequalities | P45 #11,25-30,*39,42,49,50,56, G17,G20 | |
| 7.____ | 1.7 Absolute Value Equations and Inequalities | P55 #5,6-36 (Div 6),45,47,51,55,66,67 | Practice 1.6-1.7 |
| | | P58 #1-12, *13 | Quiz 3 |
| 8.____ | Review | P62 #15-21 Div 3),30,*33,38,39,44,46 | |
| | | P65 #19-28 | |
| 9.____ | Chapter 1 Test | | Chapter 1 TEST- B |
| | | | SAT / ACT Chapter 1 Test |

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LESSON
1.1 **Practice**
For use with pages 2-9

No CALCULATOR

Write the numbers in increasing order.

3. $2, -\frac{3}{7}, 0.75, -\frac{3}{2}$

4. $3, \sqrt{10}, \frac{3}{4}, -1.5$

5. $0, -\sqrt{2}, \sqrt{5}, \frac{13}{4}$

Identify the property that the statement illustrates.

6. $(-3)(1) = -3$

7. $5(4 + (-5)) = 5 \cdot 4 + 5 \cdot (-5)$

8. $1 + (3 + 2) = 1 + (2 + 3)$

9. $a + (b + c) = (a + b) + c$

10. $a \cdot \frac{1}{a} = 1$

11. $a \cdot b = b \cdot a$

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Select and perform an operation to answer the question.

14. What is the difference of 4 and 9?

15. What is the difference of -4 and -3 ?

18. What is the quotient of 49 and -7 ?

19. What is the quotient of -21 and $-\frac{7}{3}$?

LESSON
1.2 **Practice**
For use with pages 10-17

4. $(2x \cdot 2x \cdot 2x) + 5$

5. $(3a \cdot 3a) - (b \cdot b \cdot b \cdot b)$

6. 2 to the n th power

Evaluate the expression.

7. $(-4)^2$

8. -2^4

9. $3 - (4 - 2) \cdot 5$

10. $1 + (5^2 - 10) \div 5$

11. $(6 - 5)^3 + 14 \div (2 + 5)$

12. $24 - (1 + 1)^4 \div 4$

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LESSON
1.2 **Practice** *continued*
For use with pages 10-17

Evaluate the expression for the given value of x .

15. $3x^2 - 2x$ when $x = -2$

16. $2x^2 \div (4 - 2x) + 2$ when $x = 4$

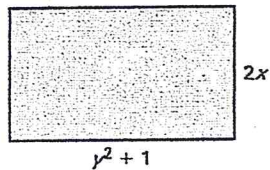
Evaluate the expression for the given values of x and y .

21. $\frac{3x + y - 1}{2x - y}$ when $x = 3, y = 4$

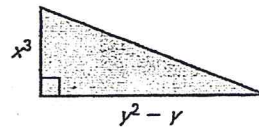
22. $\frac{(2x - 2)^3}{-y^3 - 3}$ when $x = 2, y = -2$

Write an expression for the area of the figure. Evaluate the expression for the given values of the variables.

23. $x = 3, y = 3$



24. $x = 2, y = 5$



25. **Photography Studio** A photography studio advertises a session with a sitting fee of \$8.95 per person. The standard package of pictures costs \$29.95. Write an expression that gives the total cost of a session plus the purchase of one standard package. Evaluate the expression if a family of four purchases this package.

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LESSON
1.3

Practice

For use with pages 18–25

Solve the equation. Check your solution.

8. $-4x = -14$

9. $\frac{3}{2}x + 1 = 13$

10. $\frac{2}{5}x + 10 = 0$

11. $\frac{4}{3}x + 2 = 6$

12. $x + 6 = 3(5 - x)$

13. $x + \frac{3}{2} = \frac{3}{4}\left(x - \frac{1}{2}\right)$

14. $3(x - 2) = 2(2x - 3)$

15. $x + \frac{3}{5} = \frac{7}{5}(x + 1)$

16. $\frac{1}{2}(14x + 2) = 3(2 - 3x)$

17. $5x = \frac{4}{5}(5x - 2)$

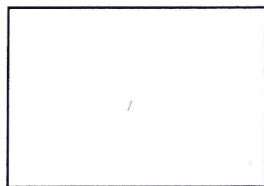
18. $x + 6 = 3(3 - x)$

19. $\frac{5}{4}(4x + 2) = 3$

20. $27 - 2x = 2(x + 1)$

21. $x + 4 = 2x - 8\left(\frac{1}{4}x - \frac{1}{4}\right)$

22. **Perimeter** The perimeter of the rectangle below is 78 feet. Find its dimensions.



$2x + 3$

$2x - 4$

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LESSON
1.4

Practice

For use with pages 26–32

Substitute the given value of x into the equation. Then solve the equation for y .

2. $6x + 5y = -7; x = -2$ 3. $xy = 12 + 3x; x = 4$

Solve the equation for y . Then find the value of y for the given value of x .

10. $\frac{1}{2}x - y = \frac{3}{2}x - 3; x = 7$ 11. $\frac{3}{4}x + \frac{4}{7}y = \frac{5}{4}x - 1; x = 8$ 12. $\frac{3}{5}y - 4x = 3 - 2y; x = 9$

Solve the formula for the indicated variable.

17. Area of a Trapezoid

Solve for b_1 : $A = \frac{1}{2}(b_1 + b_2)h$

18. Volume of a Right Circular Cylinder

Solve for h : $V = \pi r^2 h$

19. Lateral Surface Area of a Right Circular Cylinder

Solve for h : $S = 2\pi r h$

20. Volume of a Right Circular Cone

Solve for h : $V = \frac{\pi r^2 h}{3}$

Solve the formula for the indicated variable. Then use the given information to find the value of the variable. Include units of measure in the answer.

21. Area of a Parallelogram

Solve for h : $A = bh$

Find h when $A = 81 \text{ cm}^2$ and $b = 9 \text{ cm}$.

22. Celsius to Fahrenheit

Solve for C : $F = \frac{9}{5}C + 32$

Find C when $F = 77^\circ\text{F}$.

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LESSON
1.5 **Practice**
For use with pages 34–40

Use the formula $d = rt$ for distance traveled to solve for the missing variable.

1. $d = \underline{\quad ? \quad}$, $r = 55$ mi/h, $t = 3$ h

2. $d = 240$ mi, $r = 60$ mi/h, $t = \underline{\quad ? \quad}$

3. $d = 552$ mi, $r = \underline{\quad ? \quad}$, $t = 8$ h

4. $d = 247.5$ mi, $r = 45$ mi/h, $t = \underline{\quad ? \quad}$

Look for a pattern in the table. Then write an equation that represents the table.

9.

| | | | | |
|-----|---|----|----|----|
| x | 0 | 1 | 2 | 3 |
| y | 5 | 10 | 15 | 20 |

10.

| | | | | |
|-----|----|----|----|----|
| x | 0 | 1 | 2 | 3 |
| y | 22 | 25 | 28 | 31 |

11.

| | | | | |
|-----|----|----|----|----|
| x | 0 | 1 | 2 | 3 |
| y | 17 | 16 | 15 | 14 |

12.

| | | | | |
|-----|----|----|----|----|
| x | 0 | 1 | 2 | 3 |
| y | 89 | 82 | 75 | 68 |

14. **Cable Bill** Your local cable company charges \$29.99 per month for basic cable service. Premium channels are available for a surcharge of \$5.95 per channel. You have \$70 per month budgeted for cable. How many premium channels can you purchase?

15. **Sharing the Drive** You and a friend take turns driving on a 450 mile trip. Your friend drives for 3.5 hours at an average speed of 60 miles per hour. What must your average speed be for the remainder of the trip if you want to reach your hotel in 4 more hours?

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LESSON
1.6 **Practice**
For use with pages 41–47

Solve the inequality.

3. $x - 5 > 9$

4. $4x \leq 48$

6. $3x \leq 8 + x$

7. $7x + 3 > 10$

9. $-x + 4 \geq -2$

10. $5 - 5x \leq 10$

12. $4 < 3 - x$

13. $-3x + 6 \leq 6$

15. $-3 < x - 3 < 0$

16. $2 \leq x + 3 \leq 5$

Solve the inequality and then graph the solution.

21. $2 - x > 3x + 10$

22. $3(x + 2) \geq 15$



23. **Population of Hawaii** From 2000 to 2003, Hawaii's population grew approximately by 3.8% from 1,211,537 to 1,257,608. Write an inequality that represents the number of people living in Hawaii during this time period.

24. **NBA** The all time leading scorer in NBA history is Kareem Abdul-Jabbar with 38,387 points. The tenth player on this list is John Havlicek with 26,395 points. Write an inequality that represents the range of points scored by the top ten all time leading scorers in NBA history.

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LESSON
1.7

Practice

For use with pages 50–58

Decide whether the number is a solution of the equation.

4. $|4 - 3x| = 10$; 2

5. $|\frac{1}{3}x + 3| = 6$; -9

6. $|2 - \frac{1}{2}x| = 5$; -6

Solve the equation.

7. $|x - 3| = 5$

8. $|2x + 6| = 12$

12. $|9x - 2| = 7$

13. $|2x - 3| = 3$

14. $|1 - \frac{1}{5}x| = 3$

15. $|5 - 6x| = 7$

Solve the inequality.

16. $|x - 3| < 8$

17. $|2x - 3| \geq 5$

18. $|3 - x| \leq 3$

22. $|\frac{1}{3}x + 4| > 1$

23. $|4 - \frac{1}{2}x| \leq 6$

24. $|2 - 3x| \geq \frac{2}{3}$

25. **Golfing** You plan on going golfing this weekend with a friend. You can either go to your favorite course which is 14 miles north of your house or to your friend's favorite course which is 14 miles south of your house. Write an absolute value inequality that represents all the distances you may be from your house.

26. **Garter Snake** The garter snake is a common species in North America. There are various subspecies and coloration schemes depending on the geographical location. Typical adult garter snakes range in length from 46 to 130 centimeters. Write an absolute value inequality that represents the range of lengths of adult garter snakes.