

ANSWER SHEET

Instructions: Place your answers to all problems on this sheet. Attach your work for the problems on the back. If answer doesn't fit on the answer sheet and is on your solution paper, indicate that in the answer slot below by writing "on solution paper".

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Worksheet: _____

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Solve the problems on a separate sheet of paper. Also write your answers on the answer sheet.

Section 2.1 – The Addition Property of Equality

Tell whether each of the following is a linear equation.

1. $\frac{6}{x} - 3 = 7$

2. $7x^2 + 12 = 8$

Solve each equation by using the addition property of equality. Check each solution.

3. $4x + 2 = 5x + 7$

4. $\frac{2}{3}t - 5 = \frac{5}{3}t$

Simplify and then use the addition property of equality.

5. $5x + 2(2x + 1) - (8x - 1 - 2) = 5\frac{1}{4}$

6. $\frac{8}{5}t + \frac{1}{3} = \frac{5}{6} + \frac{3}{5}t - \frac{1}{6}$

2.2 – The Multiplication Property of Equality

Solve each equation and check your solution.

7. $-16a = -48$

8. $\frac{3p}{7} = -6$

Solve each equation and check your solution.

9. $7y - 2y = 45$

10. $7q - 10q = -24$

Section 2.3 – More on Solving Linear Equations

Solve each equation and check your solution.

11. $4r - 3(3r - 2) = 8 - 3(r - 4)$

12. $\frac{5}{6}(r - 2) - \frac{2}{9}(r + 4) = \frac{7}{18}$

Section 2.3 – More on Solving Linear Equations (cont)

These equations have either no solution or infinitely many solutions. Solve each equation and indicate the type of solution.

13. $4(2p - 3) - 3(3p + 1) = -18 - p + 3$

14. $8k + 14 = 2(k + 2) + 3(2k + 1)$

Write an expression for the two related unknown quantities.

15. The product of two numbers is 17. One number is p . What is the other number?

Section 2.4 – An Introduction to Applications of Linear Equations

Write an equation for each of the following then solve the problem. Use x as the variable.

16. If 2 is subtracted from four times a number, the result is 3 more than six times the number. What is the number?

17. On a psychology test, the highest grade was 38 points more than the lowest grade. The sum of the two grades was 142. Find the lowest grade.

Solve each problem.

18. Find the measure of the angle whose supplement measures 20° more than twice its complement.
19. Find two consecutive even integers such that the smaller, added twice to the larger, is 292.

Section 2.5 – Formulas and Applications from Geometry

In the following exercises, a formula is given, along with the values of all but one of the variables in the formula. Find the value of the variable that is not given.

20. $I = prt$; $I = 288$, $r = 0.04$, $t = 3$

Solve each formula for the specified variable.

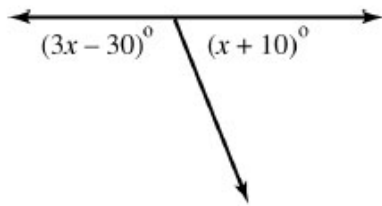
21. $A = p + prt$ for p

Section 2.5 – Formulas and Applications from Geometry (cont)

Use a formula to write an equation for each of the following applications; then solve the application.

22. A water tank is a right circular cylinder. The tank has a radius of 6 meters and a volume of 1356.48 cubic meters. Find the height of the tank. (Use 3.14 as an approximation for π .)

Find the measure of each marked angle.



23.

Section 2.6 – Ratios and proportions

Write a ratio for each word phrase. Write fractions in lowest terms.

24. 9 dollars to 48 quarters.

25. 5 months to 2 years.

A supermarket was surveyed and the following prices were charged for items in various sizes. Find the best buy (based on price per unit) for each of the following items.

26. Rice:

1-pound box: \$1.29

2-pound box: \$2.31

3-pound box: \$3.32

5-pound box: \$4.44

Solve each equation

27. $\frac{g}{5} = \frac{g-2}{2}$

28. $\frac{4}{z+1} = \frac{2}{z+7}$

Solve the problem involving proportions.

29. Ginny can type 8 pages of her term paper in 30 minutes. How long will it take her to type the paper if it has 20 pages?

2.7 – Further Applications of Linear Equations

Solve the problem

30. How much pure alcohol is in 50 liters of a 45% alcohol solution?
31. Total receipts from the sale of 300 tickets to a school musical were \$1130. If student tickets cost \$3 each and adult tickets \$5 each, how many student tickets were sold?

Solve the problem. Assume that simple interest is being paid.

32. Felicia Whitcomb has some money invested at %5, and \$5000 more than this amount invested at 9%. Her total annual interest income is \$1430. Find the amount invested at each rate.

Section 2.8 – Solving Linear Inequalities

Graph the inequality on a number line.

33. $-4 \leq x < 4$

34. $7 < a$

Solve each inequality and graph the solutions.

35. $\frac{1}{2}r \geq 5$

36. $3 - \frac{1}{4}z \leq 2 + \frac{3}{8}z$

37. $-10 \leq 4t - 2 < 6$

Use an inequality to solve each problem.

38. Find every number such that one third the sum of that number and 24 is less than or equal to 10.