

Review Assignment for Chapter 1 Equations and Inequalities (26 pts)

NO LATE PASSES (3 pt. per day late penalty)

In each section, answer the questions in complete sentences and solve each problem. Neatly and clearly show all the major steps in leading to the solution. Be prepared to present any of these points to the class if called on to do so. Do all work and writing on a separate sheet of graph paper.

1.1 Real Numbers and Number Operations

1. Define the following: rational number, irrational number, integer, whole number, the opposite of a number, the reciprocal of a number. Give examples of each.

2. Find the difference between -9 and -3 .

3. Find the product of -4 and -6 .

4. Find the quotient of -12 and $-\frac{2}{3}$.

1.2 Algebraic Expressions and Models

5. List the order of operations in evaluating numerical expressions

6. Explain what makes terms in an algebraic expression "like" each other.

Evaluate the expression: 7. $-1 + (3+2)^2$ 8. $(5-2)^3 \div 9 - 6$

Evaluate the expression for 9. $x(2+x)$ when $x = -5$

the given value of x : 10. $\frac{5(x-y)}{2xy+1}$ when $x = -2$ and $y = -5$

Simplify the expression:

11. $10(x-3) + 2(5-3x)$ 12. $6(x^2-x) - 3(2x-x^2)$

1.3 Solving Linear Equations

13. $\frac{1}{2}(4x+10) = 5-3x$ 14. $\frac{1}{2}x+2 = 3-\frac{3}{4}x$ 15. $6x-3 = -4(2x+5)+45$

1.4 Rewriting Equations and Formulas

16. Solve for y :
 $-3x+7 = 2y+3$

17. $\frac{3}{4}x + \frac{7}{4}y = -6$

18. Solve for h :
 $V = \frac{\pi r^2 h}{3}$
(Volume of cone)

19. solve for b_2
 $A = \frac{h}{2}(b_1+b_2)$
(area of trapezoid)

1.5 Problem Solving Using Algebraic Models

(20) Write an algebraic model and solve.
You just added a family room to your home. You have budgeted \$450 for carpeting. If you need 30 square yds. of carpeting, how much can you spend per square yard?

(21) You need to do an experiment at home for your science class and write a lab report. The experiment involves trials that take 5 min. each to perform. You want to watch a basketball game that starts in $1\frac{1}{2}$ hours. It takes about 30 min. to write a lab report. How many trials can you perform before the game starts?

1.6 Solving Linear Inequalities

Solve the inequality and graph the solution.

(22) $-4 < 2 - x < 6$ (23) $x - 4 \leq 2$ or $x - 4 \geq 12$

(24) $1 - 2x > x + 10$

1.7 Solving Absolute Value Equations and Inequalities

What is the absolute value of a number?
Describe when the solution of an absolute value equation results in an "and" inequality and when it results in an "or" inequality.

Solve the equation and graph.

(25) $|2x - 1| > 5$

(26) $|\frac{1}{2}x - 3| \leq 5$