

Show all work neatly and systematically for full credit. Total points: 104(4 points each).

Solve.

1) $7x + 3(-2x - 3) = -6 - 2x$

Solve.

4) $\frac{1}{3}(r + 6) = \frac{1}{6}(r + 8)$

Evaluate.

2) $9x \div 18x^2 + 5$, for $x = 4$

Solve.

5) (a) $x - 3.5 = -2.7$

(b). $\frac{8}{9}x = 40$

Perform the indicated operation and, if possible, simplify.

3) a. $\frac{20x}{y} \cdot \frac{7y}{28}$

b. $8 \div \frac{16}{5}$

Percent/decimal/fraction.

6) a. Convert to decimal notation.
51.8%

b. Write the fraction as percent.
 $\frac{3}{8}$

Simplify.

$$7) 3x - [2 - 8(8x - 7)] - 5x + 18$$

Solve.

$$11) -\frac{2}{3}x + 2x = \frac{6}{5}x + \frac{4}{5}$$

Solve.

$$8) 5x + 2 + 3x = 9x + 3 - x$$

Solve the literal equation for the specified variable.

$$12) 4x - 9y = 4 \text{ for } y$$

Solve the inequality and express the solution set in interval notation or in set builder notation.

$$9) 3x \geq -5(2x - 3)$$

Simplify.

$$13) 10^2 + 7 \cdot 10 - 4(8 + 5 \cdot 2)$$

Simplify.

$$10) 3 + 6^2 - (-4) \cdot 5$$

Solve the problem.

- 14) Suppose that 13% of the teachers at a university attended a conference. If 780 teachers attended the conference, how many teachers are at the university?

Write the given statement using inequality symbols.

Remember to define a variable for the unknown quantity.

- 17) (a). The number of people the school can hold is at most 163.

(b). The speed of the bike cannot exceed 8 mph.

Solve the inequality and express the solution set in interval notation or in set builder notation.

18) $-3(-3 - x) < 5x + 21 - 12 - x$

Find the unknown in each percent question.

- 15) 25% of what number is 700?

Solve the equation.

19) $-5.2x + 1.2 = -67.8 - 0.2(x - 3)$

Add/Subtract.

16) a. $-17.4 + 9.1 + (-14) + 7$

b. $0.077 - 1$

Solve the problem.

- 20) The second angle of a triangle is 3 times as large as the first. The third angle is 65° more than the first. Find the measure of each angle.

Solve the problem.

- 23) Claire has received scores of 85, 88, 87, and 95 on her algebra tests. What is the minimum score she must receive on the fifth test to have an overall test score average of at least 90?

List all the elements of B that belong to the given set.

21) $B = \{16, \sqrt{8}, -10, 0, \frac{3}{4}, -\frac{4}{3}, 6.9, -4\}$

a. Integers

b. Rational numbers.

Perform the indicated operation and, if possible, simplify.

24) a. $\frac{14}{15} + \frac{1}{9}$

Solve the literal equation for the specified variable.

22) $A = P(1 + nr)$ for r

b. $\frac{5}{39} - \frac{4}{13}$

Factors.

25) a. List the factors of the expression.

$$5(8 - z)(r + p)$$

b. Factor the following:

$$7m + 49n - 21$$

Solve the problem.

26) The perimeter of a rectangular room is 140 feet.
Find the length and width of the room if the
length is 4 feet longer than twice the width.